ETC.

A REVIEW OF GENERAL SEMANTICS

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an international quarterly of discussion, research, and theoretical inquiry in Non-Aristotelian systems and General Semantics

in Volume VIII, Number 3:

Nylons and Toni-wave kits over Moscow! Politburo baffled. The next stage of the cold war is described by DAVID RIESMAN.

How do you talk to handicapped children? And how well do you listen? WENDELL JOHNSON gives advice to parents and therapists.

Two discussions: Are values implicit in science? GEORGE A. LUNDBERG and ANATOL RAPOPORT examine the issues. How are General Semantics and Phyloanalysis related? Similarities and differences are described by CHARLES I. GLICKSBERG, TRIGANT BURROW, and S. I. HAYAKAWA.

What does a medical diagnosis 'mean'? Dr. LESTER KING examines the implications of the physician's language.

LORING THOMPSON explains the 'grammar' of communication by graphs and charts.

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ETC.: A REVIEW OF GENERAL SEMANTICS

OFFICIAL ORGAN OF THE INTERNATIONAL SOCIETY FOR GENERAL SEMANTICS, FOR THE ENCOURAGEMENT OF SCIENTIFIC RESEARCH AND THEORETICAL INQUIRY INTO NON-ARISTOTELIAN SYSTEMS AND GENERAL SEMANTICS. FOUR TIMES A YEAR: SEPTEMBER, DECEMBER, MARCH, JUNE.

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✡ OBITER DICTA ✡

THE NYLON WAR

DAVID RIESMAN *

TODAY—AUGUST 1, 1951—the Nylon War enters upon the third month since the United States began all-out bombing of the Soviet Union with consumer's goods, and it seems time to take a retrospective look. Behind the initial raid of June 1 were years of secret and complex preparations, and an idea of disarming simplicity: that if allowed to sample the riches of America, the Russian people would not long tolerate masters who gave them tanks and spies instead of vacuum cleaners and beauty parlors. The Russian rulers would thereupon be forced to turn out consumers' goods, or face mass discontent on an increasing scale.

The Nylon War was conceived by an army colonel—we shall call him 'Y'—whose name cannot yet be revealed. Working with secret funds which the Central Intelligence Agency had found itself unable to spend, Y organized shortly after World War II the so-called 'Bar Harbor Project,' the nucleus of what, some five years later, became 'Operation Abundance,' or, as the press soon dubbed it, the 'Nylon War.' After experiments with rockets and balloons, it was concluded that only cargo planes—navigating, it was hoped, above the range of Russian radar—could successfully deliver the many billion dollars worth of consumer goods it was planned to send. Nevertheless, when Y and his group first broached their plans to a few selected Congressional leaders in the winter of 1948 they were dismissed as hopelessly academic. America had neither the goods nor the planes nor the politics to begin such an undertaking. But in the fall of 1950, with the country bogged down in a seemingly endless small-scale war in Korea, Y's hopes revived. For one thing, the cargo planes needed for the job were beginning to become available. Moreover, a certain amount of overordering by the Armed Services, panicky over Korea, had created a stockpile of consumer goods. More important, the Administration, having locked up all known and many suspected Communists in one of the old camps for Japanese aliens, had still not convinced the country that it was sufficiently anti-Soviet, though at the same time many Americans wanted peace but did not dare admit it. A plan which, in fact and

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in presentation, took attention away from alleged Far-Eastern bungling, and which was both violently anti-Soviet and pro-peace, appeared to offer the possibility of restoring the Administration's tottering position in the country.

This is not the place to recount the political maneuverings that preceded Truman's success in securing a two billion dollar initial appropriation from Congress, nor the Potomac maneuverings that led to the recruitment of top-flight production and merchandising talent from civilian life. Our story begins with Truman going before Congress to secure authority to 'bring the benefits of American technology to less fortunate nations' by round-the-clock bombing, the day after the news of the first raids hit the American public.

THE PLANNERS of the Bar Harbor Project had staked American prestige, their professional futures, and the lives of six thousand airmen on the belief that the Soviets would not know of these first flights nor meet them with armed resistance. When the opening missions were accomplished without incident, permitting Truman to make his appeal, Washington was immensely relieved; but when the second wave of planes met with no resistance either, Washington was baffled. It was at first assumed that the Soviet radar network had again simply failed to spot the high-flying planes—cruising at 48,000 feet and self-protected from radar by some still presumably secret device. We now know that what actually happened was a division of opinion in the Kremlin—we can piece the story together from intelligence reports and from clues in *Pravda*. A faction, led by foreign trade chief Mikoyan, maintained that the scheme was a huge hoax, designed to stampede Russia into a crusade against a fairy-tale—and so to make her the laughing stock of the world. He counselled, wait and see. And, indeed, it *was* a fairy-tale for secret police boss Beria, who argued that the raids had never taken place, but that reports of them had been faked by some Social Democatic East Germans who had somehow gotten access to the communications networks. When this idea was exploded, Beria counselled shooting the planes down, on the ground that they were simply a screen spying out plants for an atomic attack. Stalin himself believed with repentant economist Varga that American capitalism had reached so critical a point that only through forcible gifts overseas could the Wall Street ruling clique hope to maintain its profits and dominance. Coupled with these divisions of opinion, which stalemated action, was the fear in some quarters that America might welcome attacks on its errand-of-mercy planes as a pretext for the war of extermination openly preached by some only mildly rebuked American leaders.

At any rate, the confusion in the Politburo was more than mirrored by the confusion in the target cities caused by the baptismal raids. Over 600 C-54s streamed high over Rostov, and another 200 over Vladivostok, dropped their cargoes, and headed back to their bases in the Middle East and Japan. By today's standard these initial forays were small-scale—200,000 pairs of nylon hose,

4,000,000 packs of cigarettes, 35,000 Toni-wave kits, 20,000 yo-yos, 10,000 wrist watches, and a number of odds and ends from P-X overstock. Yet this was more than enough to provoke frenzied rioting as the inhabitants scrambled for a share. Within a few hours after the first parcels had fallen, the roads into the target cities were jammed. Road blocks had to be thrown up around the cities, and communications with the outside were severed. The fast-spreading rumors of largesse from above were branded 'criminally insane,' and their source traced to machinations of the recently purged 'homeless cosmopolitan Simeon Osnavitch (Rosenblum).'

BUT THE PROPAGANDA of the deed proved stronger than the propaganda of the word. As Odessa, Yakutsk, Smolensk, and other cities became targets of aggressive generosity, as Soviet housewives saw with their own eyes American stoves, refrigerators, clothing, and toys, the Kremlin was forced to change its line and, ignoring earlier denials, to give the raids full but negative publicity. David Zaslavsky's article in the June 10 *Izvestia* heralded the new approach. Entitled 'The Mad Dogs of Imperialism Foam at the Mouth,' he saw the airlift as harbinger of America's economic collapse. 'Unable because of the valiant resistance of the peace-loving democracies to conquer foreign markets, America's Fascist plutocracy is now reduced to giving away goods. . . .' Taking another line, *Red Star* argued that to accept American consumer goods would make stalwart Russians as decadent as rich New Yorkers.

However, the Russian people who could get access, either directly or through the black market that soon arose, to American goods seemed not to fear decadence. Again, there was a change of line. Falling back on a trick learned during Lend-Lease, it was claimed that the goods were Russian-made, and *Pravda* on June 14 stated that the Toni-wave kit had been invented by Pavlov before World War I. However, Colonel Y's staff had anticipated this altogether routine reacion. On June 17, the target cities of that day—Kiev, Stalingrad, Magnitogorsk—received their wares wrapped in large cartoons of Stalin bending over, in a somewhat undignified pose, to pick up a dropped Ansco camera. This forced still another switch of line. On June 20 Beria went on the air to announce that the Americans were sending over goods poisoned by atomic radiation, and all papers and broadcasts carried scare stories about people who had died from using Revlon or Schick shavers. And indeed booby traps (planted by MVD) succeeded in killing a number of overeager citizens. For a while, this permitted specially-recruited Party members to gather up the goods and take them to headquarters for alleged de-radiation.

But here something unexpected occurred. We know from a few people who managed to escape to the West that a number of Party elements themselves became disaffected. Asked to turn in all American goods, they held on to some possessions secretly—there was a brisk underground trade in fake Russian labels.

Sometimes wives, having gotten used to the comforts of Tampax and other disappearing items, would hide them from their more ascetic husbands; children of Party members cached pogo sticks and even tricycles. Thus it came about that when Party members were ordered to join 'decontamination' squads the depots were re-entered at night and portable items taken. By the beginning of July, all attempts to deceive the people had only made matters worse; things were getting out of hand.

FARING BADLY in the 'War,' the Kremlin turned to diplomacy. On July 5 at Lake Success Malik described the airlift as 'an outrage remindful of Hitlerite aggression' and, invoking Art. 39 of the U.N. Charter, he called on the Security Council to halt the 'shameful depredations of the American warmongers.' Austin replied that 'these gifts are no more or less than a new-fashioned application of ancient principles,' and the Russian resolution was defeated, 9-2. The next step occurred in Washington, when Ambassador Panyushkin handed Secretary Acheson a sharply worded note warning that 'should these present outrages continue, the U.S.S.R. will have no recourse but to reply in kind.'

Seattle was the first American city to learn the meaning of the Soviet warning as on July 15 a hundred Russian heavy bombers (presumably from bases in the Kuriles) left behind them 15,000 tins of caviar, 500 fur coats, and 80,000 copies of Stalin's speeches on the minorities question. When the Russian planes came, followed in by American jets, many were apprehensive, but as the counter-attack had been anticipated it proved possible to prevent incidents in the air and panic on the ground. Since then, Butte, Minneapolis, Buffalo, and Moscow, Idaho, have been added to the list of America's front-line cities. But in quantity and quality the counter-offensive has been unimpressive. Searing vodka, badly styled mink coats (the only really selling item), undependable cigarette lighters—these betray a sad lack of know-how in production and merchandising. In an editorial, 'Worse than Lend-Lease,' the N.Y. *Daily News* has charged that the Nylon War gives the Soviets free lessons in the secrets of America's success, but truly conservative papers like the *Herald-Tribune* see the comparative showing of Americans and Russians as a world demonstration of the superiority of free enterprise.

IT IS CLEAR, at any rate, that free enterprise has not suffered much of a jolt—nor, indeed, has the mounting inflation been much reduced—by the Russian campaign. To be sure, the massive air-borne shipments of caviar have made luxury grocers fear inventory losses and Portugal, heavily dependent on the American anchovy market, has been worried. But these pin-pricks are nothing to what is now becoming evident on the Russian side—namely the imminent collapse of the economy. For the homeland of centralized economic planning is experiencing its own form of want in the midst of plenty. Soviet consumers, given a free choice between shoddy domestic merchandise and airlift items, want

nothing to do with the former and in a score of fields Russian goods go unwanted as the potential buyer dreams of soon owning an American version. Soviet housewives, eager to keep up with American-supplied 'Joneses,' pester their local stores, often to the point of creating local shortages—indeed, the American refrigerators have created demands, not only for electricity, but also for many foods which can now be stored (and hoarded).

Much of this disruption is the result of careful planning by the Bar Harbor Project's Division of Economic Dislocation. The Division, for example, early began studies of Russian power distribution, and saw to the landing of 60-cycle radios, shavers, toasters, milking machines, in 60-cycle areas; 25-cycle appliances in 25-cycle areas, and so on, especially with an eye to areas of power-shortage or competition with critical industries. In cooperation with G.E., methods were worked out by which the Russian donees could plug their appliances, with appropriate transformers, directly into high-voltage or street power lines; thus simply shutting off house current could not save the Russian utilities from overload. Similarly, drawing on the American monopolistic practice of tie-in sales, goods were dropped whose use demanded other items in short supply—oil ranges, for instance, were dropped throughout the Baku fields. Of course, mistakes were made and in one or two cases bottlenecks in the Russian economy were relieved, as when some containers were salvaged to repair a tin shortage of which the planners had not been advised.

But it is not only on the production end that the raids have been disruptive. Last Friday's raid on Moscow—when 22,000 tons of goods were dropped—may be taken as an illustration. For the first time General Vandenburg's airmen tackled—and successfully solved—the knotty engineering problem of dropping jeeps (complete with 150 gallons of gasoline and directions in simple Russian). So skillfully was the job done that half the three hundred vehicles parachuted down landed directly on the Kremlin's doorstep—in the center of Red Square. The raid was given wide advance publicity through the Voice and leaflets and when the great day came Moscow's factories were deserted as people fought for roof-top perches; in addition, an estimated 250,000 collective farmers swarmed into the city. In fact, as people drift from place to place hoping that their ship may fly in, the phrase 'rootless cosmopolite' at last assumes real meaning. Economists, talking learnedly of 'multipliers,' calculate that Russian output is dropping 3 per cent a month.

THE KREMLIN HAS REACTED in the only way it knows, by a series of purges. Sergei Churnik, erstwhile head of the cigarette trust, is on trial for 'deliberate wrecking and economic treason.' Bureaucrats live in terror lest their region or their industry be next disrupted by the American bombardment, and they waver between inactivity and frantic Stakhanovite shows of activity. These human tragedies testify to the growing fear in the Politburo concerning the long-run conse-

quences of the American offensive. The tangible proofs of American prosperity, ingenuity, and generosity can no longer be gainsaid; and the new official line that Wall Street is bleeding America white in order to create scarcity and raise prices at home, while 'believed,' has little impact against the ever-mounting volume, and fascinating variety, of goods and rumors of goods. Can the capitalistic gluttons of privilege be such bad fellows if we, the Russians, are aided by them to enjoy luxuries previously reserved for the dachas of novelists and plant managers? In an article in the *New Statesman and Nation,* Geoffrey Gorer has recently contended that the airlift serves to revive primitive Russian 'orality,' and that the image of America can no longer be that of a leering Uncle Sam or top-hatted banker but must soon become amiably matronly. It is thoughts along this line that most worry the Politburo although, of course, the MVD sees to it that only a tiny fraction of the mounting skepticism expresses itself openly or even in whispered jokes. But what is the MVD to do about a resolution of the All-Workers Congress of Tiflis that 'Marxist-Leninist-Stalinist democracy demands that party cadres install officials who can cope with the mounting crisis'?

Translated into plain talk, this means that the Russian people, without saying so in as many words, are now putting a price on their collaboration with the regime. The price—'goods instead of guns.' For Russia's industrial plant, harassed by the rapidly growing impact of Operation Abundance, cannot supply both, let alone carry on the counter-offensive against America. Intelligence reports speak of scheduled production cutbacks varying from 25 per cent on tanks to 75 per cent on artillery; it is symptomatic that washing machines, designed to compete with the American Bendixes which are being dropped in ever-increasing numbers, will soon start rolling off the assembly lines of the great Red October Tank Works—after its former manager had been shot for asserting that conversion to peacetime production could not be achieved in less than two years.

MEANWHILE, diplomatic moves are under way—so, at least, the Alsop brothers report—to liquidate the Nylon War. It is obvious why the Russian leaders are prepared to make very considerable concessions in the satellite countries, in China, and in Indo-China in order to regain the strategic initiative in their domestic affairs. But on the American side the willingness of many to listen to Russian overtures is based on the success, rather than the failure, of the campaign. One sees a repetition of 1940 as the Washington *Times-Herald* and the *Daily Compass* join hands in attacking Operation Abundance, the former calling it 'an international WPA,' the latter arguing 'you can't fight ideas with goods.' Addressing the Stanford Alumni Club of Los Angeles, Herbert Hoover spoke for millions in observing that the monthly cost of the airlift has already exceeded the entire Federal budget for the year 1839. Still another tack has been taken by Senators who want the airlift to continue, but with different targets;

some, insisting that charity begins at home, have wanted free goods landed on their districts; others have supported the claims of Japan, the Philippines, or Franco. Still others fear that many of the air lift items could be reconverted in some way for use by the Russian war machine; they are especially opposed to the jeep delivery program, despite reports it is wreaking havoc with the Russian road system as well as with the gasoline supply. And the House Un-American Affairs Committee has charged that trade secrets are being delivered to Russian spies by Red homosexual officials and professors disguised as plane pilots.

THESE ARE THE OBVIOUS enemies, and against them stand some obvious friends of the Nylon War. Both AFL and CIO, now in their eighth round of wage increases, vigorously support the program, though it is rumored that the Railroad Brotherhoods have done so only in return for a fact-finding board's support of a 14-hour week. Farmers have become reconciled by the promise that bulk agricultural products will soon move over the aerial transmission belt—in part to encourage the wanderings of Russian farmers. The business community is divided, with the CED, Juan Trippe, and Baruch leading the supporters of the airlift.[1] But it would be a mistake to assume that support of Operation Abundance springs only from hopes of material gain. The renewed fight against oppression and want, the excitement of following the raids in maps and betting pools, the ridiculousness of the Russian response—all these things have made many millions of Americans less anxious than they have been since the days in October 1950 when it seemed as if the Korean War would be quickly concluded.

Indeed, it is just this loss of tension which has given rise to much of the covert opposition to the Nylon War, as distinguished from the overt opposition already discussed. On the one hand, certain leaders are frightened that the Russian dictatorship may indeed be overthrown—as Colonel Y in his more optimistic moments had ventured to hope. This is thought to raise the possibility of all sorts of chaotic movements developing in Central and Eastern Europe, and even further west—Franco, for instance, feels threatened at the loss of his 'enemy,' and has offered to act as mediator in the Nylon War. On the other hand, it has become increasingly difficult for American politicians to frighten the American public about Russia: the once-feared monolith now appears as almost a joke, with its crude poster-and-caviar reprisals, its riots over stockings, soap, Ronsons, and other gadgets which Americans regard in matter-of-fact fashion. The sharp

[1] It goes without saying that there are many fights within pressure groups as to *what* the airlift shall carry—and ideological considerations are not confined to the Soviet side. Thus, the Committee Against Juvenile Delinquency has registered strong protests against sending comic books. More serious issues revolve around the Planned Parenthood League's campaign to get contraceptives included in the airlift items. In addition to humanitarian arguments, the claim is made that this will reverse the demographic trend now so favorable to Russia; the League's slogan is 'Give them the tools and they will do the job.' Walter Lippman predicts a Rome-Moscow axis if the League should win out.

drop in war sentiment in the United States has resulted in psychological and even actual unemployment for a number of people.

WHAT DO THE COMING months hold? It is significant that this depends almost entirely on the outcome of the American domestic struggle: the Nylon War has altered the whole power-complex which, as the Korean War dragged on, still heavily favored Russia. It is now Russia, not America, whose resources are overcommitted, whose alliances are overstrained. In fact, Mao's visit to Moscow at the end of July seems to have been attended with apprehension lest he ask America to cut Red China in on Operation Abundance—at a price, of course. The possibility that this may redound to the credit of the Truman Administration in the 1952 campaign is not the least of the nightmares haunting many Americans, and at this writing it is impossible to predict whether the opponents of the program will win out.

Meanwhile, Operation Abundance marches on, solving technical problems of incredible complexity. The latest move is the perfection of an ordering system whereby Russians can 'vote' for the commodities they most want, according to a point system, by the use of radio-sending equipment, battery-run, with which we have provided them. The commodities available will be described over the Voice of America—now for the first time having something to 'sell'—by Sears Roebuck-type catalogues, and by dropped samples in the case of soft goods. The method making it impossible for the Russian government effectively to jam this two-way communication of distributor and consumer is still the great secret of the Nylon War.

> In reality, it is not the neurotic — i.e., badly disintegrated — personality which is important to the world but the fragments of neurosis or delusion in normal men (including psychiatrists). It is not the technique of salvaging disintegrated personalities which most urgently needs development but a discipline whereby the normal man can train himself to become something healthier than a normal man, to become an athlete of reality. The world cannot be saved from destruction by eliminating clinical neurosis among individuals and groups. It can only be saved by eliminating the neurosis in normal men, which necessitates not only a doctrine for the psychic re-education of the human race, but the creation of political institutions that encourage the maximum integration of the average man. . . Psychiatry and political science should be subsidiary disciplines of a single science of human survival. EDMOND TAYLOR, *Richer by Asia.*

BEING UNDERSTANDING AND UNDERSTOOD:
or How to Find a Wandered Horse

WENDELL JOHNSON *

I WANT TO TALK with you from the point of view of 'the person on the other side of the desk.' I want to try to tell you, if I can, what the handicapped child or adult would tell you if he could, if he knew enough about you, about your work, and if he knew enough about his own difficulties.

To begin with, I think that the representative handicapped child would tell you, if he could, that he is very grateful for the work you are trying to do. I think he would be impressed by your tests, your standardized interviews, if you have any (there are psychologists who do not believe in them), remedial procedures, your play therapies, etc. He would try to tell you that he thinks you are doing great work and he would mean it. I say this with considerable conviction, because I have been on the other side of the desk. As a stutterer, I am very grateful to everyone who has attempted to help me.

But the handicapped child would also want to tell you something else. He might find it very difficult to find the words, but somehow he would want to say to you that there is something missing, that he wishes that we, as professional workers, were able to understand him a little better. He realizes that we understand him to a certain extent, but he feels that our understanding of him is often rather highly specialized. We understand him only as a particular type of individual. The understanding is somehow partial. It may even be the kind which precludes our paying any attention to certain phases of his problem, or of him as an individual, or of the situation in which the problem has meaning for him. There are, for example, psychologists and other kinds of clinical workers, who tend to become very dogmatic about their methods and points of view, and who refuse to consider certain aspects of a given case. The child on the other side of the

* Professor of Speech Pathology and Psychology and Director of the Speech Clinic, University of Iowa, Dr. Johnson is the author of *People in Quandaries* and other books. This article is a reproduction, with minor changes, of a wire recording of a speech given by Dr. Johnson for the 1948 guidance workshop of the Advisement Service of the Los Angeles, California, Public Schools. Reprinted by permission, and with change of title, from Publication No. 469, Adult and Vocational Education Division, Los Angeles City School Districts, May, 1949, pages 60-67.

desk feels that such a worker is not paying attention to certain things that to the child are very important. There are times, I think, when he would feel that he was just being out-and-out misunderstood.

I want to try now to get on the other side of the desk—your side—for a moment. As a clinical worker, I want to talk today more or less from the point of view of one who works with general semantics, and those of you who know general semantics will catch the overtones of it in my remarks. I trust that all of you will realize, however, that I cannot, in the time available, make clear explicitly what I mean in detail by general semantics.

SOME OF YOU will sense the semantic basis of the view that an important reason why we do not understand handicapped children and adults better than we do is that we tend to see them through our own individual evaluational filters. We never really see a unique individual child. We see only what we are prepared, psychologically and evaluationally, to see. We are able to feel only what we are prepared by training and experience to feel. We understand, of course, that the child on the other side of the desk is now behaving the way he behaves, partly because of his background, certain childhood experiences, the way he has been trained, and the things that he has learned and not learned. Well, the individual behind the desk has had a childhood, too. He has had a background, too. He has had parents. After all, maladjustments begin in the home, and the man behind the desk has had a home, too. He does the things he does and he has the attitudes he has for just about the same general kinds of reasons that the child operates with, and such reasons are individualized in the way they work out their effects. So you never see the child as a whole. You see only what you are prepared to see. You can understand only what you are prepared to understand. It does not matter what books you have read, either—at least, it does not matter as much as we sometimes think it does. You had a childhood in which conditions determined and limited what you are now going to do with the books you have read. The child will look different to you from the way he will look to any other worker. The net result is that the child somehow feels that he is being understood or evaluated only by one individual, and that he is not being evaluated in anything like a complete sense.

There is another reason why we do not understand these children better than we do, a very obvious reason. It is that we do not have their handicaps. In fact, we feel very often that it is a rather important part of the qualifications of a worker in this area that he not have handicaps. I wonder, however, whether it is possible for an individual who has never had a problem—if there are any individuals like that—to have any significant insight into the difficulties of individuals who do have serious problems. The point is that if you have not had a handicap, then all you can ever have in the way of knowledge of the individual that you are attempting to help is the kind of knowledge that is verbal. I do not believe that we shall ever develop a really adequate understanding of the feeble-

minded, for example, as long as only intelligent individuals work with the problem. Somehow, we are going to have to get some feeble-minded persons to specialize in this field! I do not think that we should pretend that we understand the deaf, for example, as long as we are able to hear. Oh, yes, we can understand in a kind of verbal way; we are able to make measurements and we are able to work out relationships statistically, and study the individuals in terms of what these relationships tell us about them. We are able to 'dope out' what a person would miss in the way of auditory stimulation with a given hearing loss. We are able to understand what that might mean to a person when it comes to learning how to talk or to maintain clear speech, but when all is said and done, we have never been deaf. I do not know what it is like, and I think that the best thing I can do in working with the deaf is to take that into account.

AND HOW CAN we do that? Well, I think we do it mainly in two ways. One is by never being dogmatic when it comes to how the other individual feels. We do not know for sure how he feels, and I think we ought frankly to face that. The other thing we tend to do, I think, if we have this point of view, is to be more ready to ask the child what he thinks about the problem and about our approaches to it.

Those who have attempted to help me have always wanted to ask me a good deal about how I feel about myself. I think that is good. They need to know and I need to know. They have asked me how I felt about my speech problem, and about my mother and father, etc., but seldom, if ever, has a clinical worker asked me how I felt about him, how I felt about what he was doing, how I felt about his ideas. There was always a feeling that the expert was attempting somehow to force on me a point of view, an interpretation, a kind of understanding. And almost always when I would ask questions, or say perhaps, 'No, no, you don't quite understand. . . ,' there was a tendency on the part of the clinical worker to take that to be evidence of what the psychoanalysts call 'resistance.' It is a rare clinician who listens really effectively to what 'the case' tries to tell him. It could be that as clinicians we are wrong and that 'the case' has something to tell us, that he is not resisting at all. He may be trying to teach us something. Some of our methods, for example, sound very good to us and they are backed up by great authorities, but when applied to a particular individual, they do not work. Some of the children and adults on the other side of the desk might be trying to tell us why they do not work.

I had a very strong feeling, most of the time, when I was on the other side of the desk, that the clinician working with me was *interested in the work*. I hardly ever had the feeling that the interest was directed exclusively to me, and I think I have noticed that sort of thing in other cases. In my own clinical work I feel quite sure that I, too, have a tendency to get interested in the theory and the techniques and somehow to lose sight of the child. It is actually hard to stay interested *in him*.

Consider, for example, what goes on in a training course in mental testing. You have to give possibly fifty Stanford-Binet tests to pass the course. Every child who gets one of those fifty is going to sense that you are testing him—not to *test him,* not because you are interested *in him,* but *because you want to pass the course.* You have to give fifty Stanford-Binets: and he will do as someone to test; but he also feels that anybody else would do, too. Now, there is a great deal of clinical work like that—work done by somebody trying to learn a method, somebody very much interested in the method, who spends his leisure hours talking to his friends about it, who spends his nights reading about it and trying to write about it; and then when he finds a case, he rubs his hands and says to himself, 'Ah, that's fine, now I've got a case to work on.' A handicapped child finds it hard to trust a clinical worker like that. He understands that *he* is not being examined; *the method* is being examined. The child is being used as the file, or the hammer—the tool—to refine the method. The method is not being used as a tool to solve his problem.

This all adds up to the feeling that almost all individuals have, I think, when they go to clinics, that somehow they are not being understood. They are being helped, of course, and a lot of people are putting in a great deal of time doing things which are very impressive and which they, the handicapped, are very happy to have done; but they are just a little lonely in the midst of all these activities. Somehow, someone seems to be working *on* them for some reason other than to help them. The clinical workers are doing things to them and for them in order to satisfy certain requirements that have been set up by the State Board of Education perhaps. They are doing all these things in order to write an article for some professional journal possibly. The 'case' is perfectly willing to co-operate and he may even see the value of the activities in which he is asked to participate. It is just that he feels the clinicians never quite get to know him.

Moreover, most clinical workers tend to fall rather easily into a particular kind of language habit. For the most part, we use a language that tends to have a certain kind of structure. By that, I mean that it tends to involve certain types of sentences and it tends to enforce only certain types of distinctions. For example, the ordinary language we use tends to make us talk as though there were *two* kinds of people in the world, two kinds of political possibilities, two kinds of everything. It is largely an 'either-or' language. The world, however, is not 'either-or' and the nervous system of the individual using the language is not 'either-or.' Nevertheless, when we use our common language, we tend to talk as though there were only two possibilities in any given situation. The language we use tends to relate these two possibilities in a particular way. Almost always we talk as though we were dealing with relationships that work only one way. For example, we commonly talk about handicaps as though they were to be broken down in any one case into 'symptoms' and 'causes,' and then our language does our thinking for us in terms of these two categories. There are no

'symptoms' and there are no 'causes' in nature. The categories, of course, are man-made, they are abstractions, they are verbalisms. Together, the categories of cause and symptom are a kind of system for organizing facts in a particular way. It is not the only way to organize them. There is nothing 'natural' about it—it is just the way our particular kind of language works. If it works in such a way that we are led automatically to assume that the cause is somehow more 'basic' than the symptom, nevertheless, it is to be fully realized that anybody who tells you that you should always work on the causes and never on the symptoms, is seldom, if ever, reporting the hard-earned conclusions of long and laborious investigation. *Such a person is usually echoing a kind of statement that has somehow become traditional.* It is part and parcel of the language forms of our culture. You do not have to think at all in order to talk about 'causes' and 'symptoms' as though they were distinct and as though 'causes' were more 'basic.' That is just the way the language does your thinking for you.

WHAT ARE THE FACTS in the meantime? I think almost all of the serious mistakes that are made by the workers I have tried to train, and almost all the serious mistakes I have made and still make as a clinician, tend to be of two kinds. We tend either to ignore the 'symptoms' or we over-emphasize them. There are some speech pathologists, for example, who are so hypnotized by the stutterer's 'surface noises' that they devote all their time to these 'noises.' There are others who take the attitude that they are merely 'symptoms,' so they start to hunt for the 'causes,' so that they will have something on which to work. If you have ever stuttered, however, you know very well that what we call the 'symptoms' are very important; and the attitude that they should be ignored is strange, indeed.

Stuttering can be very painful. I have had stutterers in my clinic who would go through contortions so severe that they would fall over. Now, what kind of a psychologist is it who would stand there and watch them fall over and say, 'Oh, that's not important—that's just a symptom.' That sort of behavior is much more than a 'symptom.' It is the cause of a complex pattern of social relationships; and if you do not think it is, I suggest that you go into a department store today and stutter severely to one of the clerks. Get all blocked up, all tied up, and do not tell anyone what you are doing. When the clerk gets through telling you that she does not have whatever you have asked for, pretend to try to say, 'Thank you,' as you move away about eight or ten feet—and then suddenly blurt it out. That sort of thing happens to stutterers. You carry out this assignment and then decide whether that sort of behavior is 'just a symptom.' Note carefully whether it has any effects. Any stutterer can tell you that it has effects—tremendous effects.

The facts are that anything can be called a 'symptom' and anything can be called a 'cause.' It depends on where you are standing; and if you are standing

inside the quandary, so to speak, then the things which from the outside look like symptoms look like causes. Often the individual on the other side of the desk feels that we do not understand that, that somehow we are ignoring what is very important to him. Recently, for example, a clinical psychologist told me that she was working with a cerebral-palsied boy, about 17 years old. She said she was giving him psychotherapy, which in my judgment is highly desirable for a large proportion of cerebral palsy cases. When I asked her, however, 'Aren't you doing anything else?' she said, 'No,' as if to say, 'Well, what else is there to do?' Now, it should not take too much imagination to empathize with a cerebral-palsied individual and to realize that if anything could be done to help him directly to achieve a little more relaxation, and a little more co-ordination in the performance of everyday activities, it would be very important to him. If he could attain these kinds of improvement, the chances are that he would react much more effectively to psychotherapy.

LET US MAKE this very absurd. What I am trying to say is that one of the things we do which tends to keep us from understanding handicapped children and adults better is that we do not spend enough time trying to appreciate the symptoms, as we call them. To them, they are not symptoms so much as they are causes of frustration and misery. They want to have everything possible done to alleviate or remove the symptoms. They want to work on the so-called causes, too, of course. But in the meantime, they are in pain or distress.

Now, as I suggested, let us make the situation very absurd. Suppose that we were out in woods and we came upon a man who had accidentally got his foot caught in a bear trap. There he is, howling and carrying on frightfully, weeping and straining in a most profane fashion. Then two psychologists come by and one of them wants to give the man the Rorschach test and an intelligence test and take a case history. The other psychologist, however, has undergone a different kind of training; and he says, 'No, let's start intensive psychoanalysis right now.' So, they talk it over. They have their differences, of course, but they agree eventually that what this man in the bear trap needs is obviously psychotherapy. If he would just be trained to be a more mature individual; if he could have the release therapy he needs; if he would undergo the needed catharsis, achieve the necessary insight, and work through the essential abreaction, he would develop more maturity, he would understand the difficulty he is having, and he would then be able to solve his problem himself. Obviously, the psychologists agree, that is the only sound way to deal with the poor fellow. Suddenly, however, a farmer comes by and lets the man out of the bear trap. To the utter amazement of the psychologists, the man's behavior changes greatly and quickly. Besides, he seems to take a liking to the farmer, and goes off with him, evidently to have a cup of coffee.

The basic principle illustrated by this absurd example is that psychotherapy

is more beneficial when it is carried on under optimal conditions. And one way to prepare optimal conditions for psychotherapy, or for classroom teaching, for that matter, or for any kind of special instruction, is to do everything possible first —or as you go along—to relieve any distressing symptoms that may be distracting the individual you are trying to help. If the symptoms make a difference to the individual, if they are producing impaired social relationships, impaired self-evaluations, impaired parent-child relationships, or tantrums, or anxiety—then clearly anything that can be done directly, by means of literal or figurative aspirin, to relieve the symptoms will be all to the good in helping to bring about favorable conditions for therapy.

I STARTED OUT by saying that we tend to find it hard sometimes to understand handicapped youngsters because we see them through our own individual evaluational filters. The general point I want to make in this connection can be well illustrated by reference to a kind of experience I am sure we have all had at one time or another in going to a large hospital. There are many clinics, divisions, or departments in such a hospital, and you hardly know where to begin. You go to one of them, and either a doctor there examines you and makes a diagnosis, or else he refers you to another clinic. In this other clinic you will either be diagnosed and treated, or referred back, or referred on to a third clinic. By the time you reach the other side of the hospital at the end of the week, you have begun to wonder, 'Who is going to tie all this together for me? Who is going to tell me what all these examinations mean in functional relationship to each other? Who has the whole story here?' In one clinic someone examined your heart; in another someone examined your liver; but no one has examined you in any comprehensive fashion, and you begin to feel that you are not quite sure that anyone knows the whole story. By some sort of process that is not too easy to figure out, you end up having a last talk with somebody, and what you get then is *his* evaluation. He may take into account all of the individual reports from the various clinics, and he may not. If he does, it is not always easy to see just how he takes them into account. At any rate, he tells you something and that is what you have to tell the folks when you get home and they ask you, 'What did they say at the hospital?'

What is the matter here? I think one of the things that is the matter is that in our tendency to specialize—and we have to specialize in this complicated world—we tend to develop a pride in our own specialties, and we tend to develop the illusion that we study only facts when we specialize. Now, there is a great deal to be said for the proposition that when you study pediatrics or neurology or psychology or speech pathology, you study a special language. It is hard to determine how much you study facts, as such—whatever that means. It is perfectly obvious that you study languages or special terminologies; and each one of them, considered separately, tends to leave out much more than it

includes about the individual. You can not possibly get the whole picture, you can not possibly tell the whole story about the individual, in any one language. I take that to be perfectly obvious. Also, these languages do not always serve as handy gadgets for reporting. After you learn the language of neurology, for example, it tends to have a determining effect on your observational reactions, it tends to affect your perceptions, to direct your investigations. You look only for certain things, the things you have words for. *You do not look for things you do not have words for.* So the neurologist looks only for certain things. That is not all that his language does for him, however. The facts he does get from his language—from his directed observation—are organized by his language in a particular way. There is nothing fundamentally natural about this organization—it simply represents the way the language works. The language is a thinking machine. Our language does our thinking for us.

Consequently, one way to improve our ability to understand the person on the other side of the desk is to learn all the special languages we can. We need the language of neurology, physiology, of anatomy, of psychology, the language of Freud, Pavlov, Thorndike, Hull, Carl Rogers, the language of general semantics. We need them all, because we are not able to make adequate observations or to organize our observations in the most adequate way, or to report our findings and evaluations fully effectively with any one language. With all of them, we stand a chance of doing at least a little better job, which the individual on the other side of the desk will interpret in his way by saying that we understand him better.

FINALLY, I have a practical suggestion to leave with you, and then I shall be ready to conclude my remarks. I think we can understand the person on the other side of the desk somewhat better if we will develop an ability which the old western cowboys carried to a high point of perfection. The experienced western cowboy was able to find a lost horse with uncanny ability. I understand that he did this by working at the job of trying to feel like a horse. He asked himself, 'Now what kind of reason would I have for wandering away if I were a horse? With such a reason, where would I go?' Apparently, it is possible to empathize with a horse a good deal—to feel like a horse to a surprising degree.

At any rate, the cowboy would imagine that he was the horse, that he had the horse's reason for going, and then he would go to the place he would go if he were the horse—and usually he would find the horse.

I think this is something one is able to work at effectively in trying to help handicapped children. You simply ask yourself, 'Now, what are the possible reasons for behaving as this child does? If I were the child, what would be my reason for doing what he does? Just what would I be trying to achieve? What would I be trying to avoid?'

You can go from there to ask a lot of questions, such as, 'How could

I achieve my purposes differently? What other motives could I have? What other effects could I try to achieve, and by what other means? What changes would I have to achieve before I would be able to use other procedures, or work toward other goals?' And so forth.

The next time you see a stutterer holding his breath with all his might when he is supposedly trying to say, 'Hello!' see whether you can do what the old cowboys did, and ask yourself, 'Why would I hold my breath if I were he?' It is a very simple thing to practice—this thing of trying to get inside the other fellow's skin—and I think that one can develop a great deal of skill in doing it. It is the kind of skill that the child on the other side of the desk will interpret by saying that he feels as though he were being understood. With the risk that a pun always involves, perhaps we might say that it is a skill that the child on the other side of the desk will recognize as horse sense.

Double-talk is not always a sign of hypocrisy. Probably the easiest way of maintaining consistency in our principles is to have a second-string substitute vocabulary to use in describing any facts that do not fit into the vocabulary of our professed principles. Thus, if we believe in liberty and find that some particular exercise of liberty is annoying, we may call that license, rather than liberty. So it is possible to talk about the virtues and values of self-government without allowing this talk to influence our conduct in anyway, if we have a substitute vocabulary handy which will permit us to dismiss the appeal for self-government in any concrete case, without using the term 'self-government.' The second vocabulary to which professed believers in self-government continually turn when concrete cases arise is the vocabulary that talks about 'a state within a state,' 'segregation,' and, in the words of the Hoover Report, 'progressive measures to integrate the Indians into the rest of the population as the best solution of the Indian problem.'

There are two answers to this double-talk: One is to deny the clichés and to insist that there is nothing wrong about having a state within a state; that, in fact, this is the whole substance of American federalism and tolerance. . . .

Apart from this challenging of clichés, there is a second cure for the habit of double-talk in our discussions of Indian self-government. That remedy is to reject what Stuart Chase called 'the tyranny of words' and to think facts. FELIX S. COHEN, 'Indian Self-Government,' in *The American Indian,* Vol. V, No. 2, 1949.

HOW RELATIVE ARE VALUES?

ANATOL RAPOPORT

THE NOTION OF PROGRESS is not very old, and only a few generations ago it was not widespread, confined pretty much to the western world.

To be identified with progress, a change must be irreversible and desirable. Such changes were not until quite recently observed or experienced by human beings. The most conspicuous processes were cyclic rather than irreversible, for example, day and night, the seasons, the phases of the moon, the menstrual cycle. On the other hand the processes which were irreversible were generally *not* desirable, for example aging and death, the depletion of game, the deterioration of the soil, etc. No wonder that the notion of permanent change did not become associated with the notion of desirable change. No wonder that the majority of men until recently preferred clinging to old ways to devising new ways of living.

However, in a small area, in Western Europe, the notion of 'progress' did take root. The experience which gave rise to this notion was the harnessing of ever greater amounts of energy for production. The changes brought about by the Industrial Revolution were certainly irreversible. The life of each generation was markedly different from that of the last. And the change did seem desirable, at first primarily to the few who reaped enormous wealth from the process, but gradually also to large masses of the population, who finally began to share in the benefits of increased productivity.

About the same time, the end of the eighteenth century, the notion of progressive change forced itself into the consciousness of philosophers. Long before there was any conclusive evidence of organic evolution, philosophers began to view history as an evolutionary process instead of a sequence of haphazard or preordained events. There were the pre-Darwinian theories of evolution developed by Lamarck and Herbert Spencer. There was the dialectic of Hegel applied to the theory of history and the evolution of the state. Finally the way was cleared for theories of social evolution such as those of Marx, Engels, and the English Fabians.

During the so-called Victorian Age the belief in 'progress' found its strongest and most articulate expression in England, which was then technologically the most advanced country in the world. There was a comparative lull in the wars among the so-called civilized countries. The colonial conquests were being completed, and the center of gravity of exploitation of human labor shifted to them, while at home the growing strength of labor unions forced

a series of social reforms. In some ways the general standard of living was obviously rising and the improvements could be directly traced to the progress of technology and medicine and therefore to the fruits of scientific research. There were also progressive political democratization and a rise of literacy. These changes were all attributed to 'progress.'

The future was pictured by the writers of the period, for example by H. G. Wells, as attractive. Although a strife between the forces of Reason and those of prejudice and reaction was expected, there was no question about which would win. The Victorian Fabians prophesied a rational, cooperative society. The only difference between their prophecies and those of the Marxists was that according to the latter, socialism would be the inevitable outcome of class struggle, while according to the former, socialism was bound to win, because it was a more rational organization of society.

Disillusion

THE VICTORIAN FAITH in progress was abruptly shaken with the outbreak of the First World War and the social upheavals which followed it. The entire western world was subjected to a sort of collective traumatic experience, perhaps surpassing in intensity everything within historical memory. Attitudes toward technological progress, social change, and the power of reason changed in a variety of ways.

1. Technological progress began to appear as a mixed blessing: its destructive component seemed to outstrip the constructive.

2. Technological progress appeared also to be accompanied by a concentration of wealth, and hence of power, in fewer hands, and this seemed to bring about changes opposed to progressive democratization.

3. Socialism revealed some unexpected features. Before the First World War socialism and communism appeared almost invariably as libertarian, ultra-democratic movements. If they were opposed, they were opposed as 'visionary,' as tending to allow the individual too much liberty (it was maintained, for example, that the individual worker needed to be disciplined by respect for his betters or by constant threat of want to have incentive to work). But the first large scale socialist experiment actually was launched by one of the most authoritarian regimes in the world. In the process, many individual liberties which had been considered permanently 'won by civilization' were drastically reduced. Thus, what may have appeared as a step forward in the development of society appeared to many people, at least in some respects, as regression. And so the attitude toward social progress became ambivalent.

4. The discovery by Freud and his followers of the significance of unconscious components in human behavior induced many people to doubt altogether the feasibility of depending on rational processes for improving behavior.

5. It began to appear that the spectacular victories against infectious diseases were to a great extent offset by apparent sharp increases in mental diseases. It is not clear whether these increases are really consequences of increasing complexity of living or whether they are a statistical reflection of greater attention paid to such diseases. But the rapidly growing population of our insane asylums is nevertheless a fact and is often attributed to the evils of civilization.

Just as the optimism of the nineteenth century was reflected in the utopian novels of that time, so the increasing anxiety of the twentieth century found expression in a new kind of prophetic literature. A conspicuous example is Aldous Huxley's book, *Brave New World,* which appeared in 1932. Huxley shows our descendants living a caricature of the 'rational' life. He pictures them as completely deprived of imaginative power and the ability to love—a scrupulously sterilized world. Another example is the recent novel by George Orwell, *Nineteen Eighty-Four.* In this book the authoritarian tendencies of the modern superstate are extrapolated to a frightful degree, and a terrible picture emerges of humanity with its reasoning power atrophied, and with all its strivings reduced to a single craving—triumph over a vanquished foe, where everyone is a potential foe.

And so, although technological progress is still a demonstrable fact (in terms of kilowatts per capita), although many clinical diseases are succumbing to organized medical research (this is reflected in rising life expectancy), although literacy is spreading (one can prove it by pointing to ever-increasing tonnage of paper used for print), the question looms ever bigger: *Are we getting anywhere? If so, where?*

It is natural to question the value of supersonic research, if it produces rockets with atomic-bomb warheads. It is legitimate to say 'So what?' to the mountains of print, if 85% of our young read nothing but comic books; and to the triumphs of electronics, whose end product is eyestrain obtained in watching wrestling matches. One can ask whether the abundance achieved by mass production is worth the degradation of labor which has come in its wake. One can even shrug one's shoulders at hygiene and medicine, which may save millions of Indian babies from death by infection in order that they may die a few years later of starvation. In short, even though there is little doubt that the great changes brought about by technological progress are irreversible, a serious question arises whether they are desirable.

Debunking and Relativism

THIS HAS BEEN a century of criticism and re-evaluation. It has become commonplace to question all those values which were so firmly entrenched in the western world of the last century. The very words 'progress' and 'civilization' have assumed sarcastic connotations.

In the United States these attitudes were especially sharply expressed in the era of 'debunking.' The American counterpart of bourgeois morality had petrified into an ugly sort of provincialism. Faith in science degenerated into gadget worship; sentimentality in art dissolved into complete artistic illiteracy; middle class respectability turned into militant, bigoted mediocrity. Babbitt is indeed a sorry caricature of Galsworthy's Forsythe.

The great American debunking tradition was primarily a revolt against Babbittry. Our social critics of the early years of the century were debunkers and muckrakers, for example, Lincoln Steffens, Upton Sinclair, H. L. Mencken, Sinclair Lewis. With them disbelief and defiance of convention were weapons against prejudice.

This revolt against respectability extended itself to esthetic values. Progressive art movements, which for the most part originated in France, traditionally the home of free thought, were imported into the United States together with progressive social ideas from Germany, Austria, Scandinavia, and Russia. Even today in this country the acceptance of so-called modern art is almost synonymous in some quarters with a critical attitude toward the established norms of bourgeois society. In fact, questions concerning a person's interest in modern art are sometimes included in loyalty investigations.

ALL THESE trends, social criticism, the challenge of established values, artistic non-conformity, were most clearly expressed in a general scepticism. Devastating critique was the most eloquent weapon of the progressive intellectuals. They were not, as a rule, bearers of new radical faiths. Trained in critical analysis, they turned its edge on all the ideas which originated in their own ranks, so that even though they were certainly united in their contempt for the existing state of affairs, they could not agree on any definite plan for improving them. Bye and bye, they became accustomed to perpetual inner disagreements, and their attitude mellowed into a sort of eclectic tolerance, not so much rooted in mutual understanding as in a resignation to the impossibility of convincing anyone. The rationalization of these attitudes is known in modern social thought as 'relativity of values.'

As the new ideas in physics began to seep through into philosophy (as they always have ever since physics took the most advanced position in the conquest of knowledge), the notion of the 'relativity of values' received striking support. One of the most important notions in modern physics concerns the operational definition of physical quantities. That is to say, a physical quantity has sense only relative to the operations implied in it. If two sets of operations give two different values to the thing measured, then the physical quantity is *relative* with respect to those operations. If a quantity cannot be referred to a set of operations at all, it has no sense at all.

Let us illustrate by a trivial example. What is the longitude of New York City? Measured from Greenwich it is about 75 degrees West Longitude. But there is no reason why the zero meridian has to go through the Greenwich observatory. It may just as well go through the Yerkes observatory in Wisconsin. If we suppose that it does that, the longitude of New York will be about 15 degrees East Longitude. Here the quantity longitude is seen to be related to the measurement of the angular distance between two great circles on the earth's surface. If one asks, 'What is the *real* longitude of New York?' one can only answer that the question has no sense. There is no operation to which it refers.

If one asks how fast a body is moving, one can only answer it is moving with such and such velocity with respect to another body. The question about the *absolute* velocity of a body has no sense, because no operation can be described to determine it.

Relativity of motion was already understood to a great extent even before the formulation of the Theory of Relativity by Einstein. The new idea in Einstein's theory was to extend the notion of relativity to electromagnetic phenomena as well as to the motions of bodies. When the implications of the theory were pushed to their logical conclusions, it became apparent that not only velocities were relative but also sizes of bodies and even their masses, quantities which had been supposed to be absolute, that is, invariant, for all observers. In plain words, a great many more things were found to depend on 'where you sit' than was suspected.

ONE CAN well see how such notions give intellectual support to 'relativity of values.' To be sure, analogies prove nothing. But analogies are often sources of intellectual inspiration. For example, the notion of conservation of energy was analogous to the already established notion of conservation of matter and served as a working hypothesis, an *orientation* until sufficient data were obtained to establish it as a law of nature. Similarly, the relativistic notions of modern physics probably serve as a source of inspiration to relativistic notions in ethics. Once an orientation is established, data to support it are sure to be found. One need not know physics to derive one's ideas from it. Ideas have a way of seeping through and of spreading by tortuous routes.

With a relativistic orientation one can well say that beauty is in the perceiver, not in the object. What seems glamorous to a Papuan would probably not go over on Hollywood Boulevard, and *vice versa.*

One can well conclude that there is 'no such thing' as 'right' and 'wrong.' These notions are meaningful only relative to some basic precepts, which vary from culture to culture. Revenge is frowned upon by Christian ethics and is considered a duty in Japan. Who is to say which values are better?

One can also maintain, as many anthropologists are maintaining today, that it is impossible to determine which cultures are primitive, and which are ad-

vanced. The question always arises 'advanced in what?' Our civilization has more advanced technology than other civilizations, but it is equally true that our kinship relations are among the most primitive in the world. For example, we use the same word for father's sister and mother's sister and for mother's brother's wife. We lump under the word 'cousin' even more different relationships. Nor do we bother to indicate, beyond certain very primitive anti-incest rules, who may marry whom. On the other hand, certain Australian aborigines have the most complicated rules, definitions, and taboos about marriage. If the same yardstick is to be applied to kinship relations as to technology, i.e., if advancement is to be measured by complexity, then these Australian tribes have the most advanced sex morality, India possesses probably the most advanced religions, and, if music is to be judged by the complexity of its rhythms, some African tribes have the most advanced music.

It is no wonder that many anthropologists, being students of various human cultures, have questioned the meaningfulness of the words 'primitive' and 'advanced' as applied to culture as a whole. In order to evaluate, one must have standards. Scientific objectivity demands that if standards are to be universally applied, they must be universally applicable.

Modern students of cultures became painfully aware of the fact that for centuries white man has applied his own standards (that is, his prejudices and his particular provincialisms) in evaluating cultures of other people. Interested as they were in studying and understanding all human cultures, i.e., all manifestations of 'humanness,' they could not help noticing how the narrowness of provincial views hinders this understanding. Hence for modern anthropology the relativistic orientation was an emancipation. And many anthropologists still swear by it.

The Dilemma

IN 1947 a committee of the United Nations requested a body of anthropologists to prepare a statement on human rights on the basis of which a World Bill of Rights could be drafted, the first one in the history of the world. The following are the main points of the statement as published in *American Anthropologist* (Vol. 49, No. 4, 1947):

> 1. The individual realizes his personality through his culture, hence respect for individual differences entails a respect for cultural differences.
>
> 2. Respect for differences between cultures is validated by the scientific fact that no technique of qualitatively evaluating cultures has been discovered.
>
> 3. Standards and values are relative to the culture from which they derive so that any attempt to formulate postulates that grow out of the beliefs of moral codes of one culture must to that extent detract from the applicability of any Declaration of Human Rights to mankind as a whole.

The statements seem non-committal, to say the least. But they did not seem so to at least two American anthropologists, both of whom criticized the statement for being *too definitive*. Their argument was approximately as follows: in warning the United Nations not to set up any values for mankind, the statement was itself setting up a value, namely, a preference for *not* setting up values. So sold were these anthropologists on the relativity of values that even an obvious conclusion from that principle, namely, that relativity of values should be a guiding principle in discourse on values, was termed by them as behavior ill-becoming a scientist. (See H. G. Barnett, *American Anthropologist*, Vol. 50, No. 2, 1948.)

Let us see what the relativist anthropologists are saying. They are saying that it is incompatible with scientific objectivity to prefer one set of values to another. This point of view is not uncommon among scientists. In fact, it has been seized upon by people, who for one reason or another try to point out the inadequacy of science in dealing with human problems. They point out that science is devoid of values, that scientists, by the very nature of their profession are impartial people whose job it is merely to answer questions about means; that they have nothing to say about ends. It is true that many scientists behave that way.

Yet it might be interesting to inquire whether indeed scientific behavior implies no preferences. For one thing scientists must constantly choose among alternative theories, hypotheses, procedures, and conclusions. Their choices are not arbitrary; they are guided by a very consistent set of criteria. Scientists will consistently choose theories according to which *more* events can be explained by *fewer* assumptions, procedures which will give *most* results for *least* effort, conclusions which will enable them to predict *more accurately*, etc. To the extent that scientists follow these criteria, they have achieved a remarkable amount of agreement among themselves about the way things happen. And furthermore this agreement is not based on the veneration of authority or on the gagging of dissenting opinions. On the contrary, no matter what his accomplishments, a scientist's ideas are constantly vulnerable to criticisms by any one who cares to criticize.

This freedom of expression and criticism is important to scientists. Almost invariably where scientists can speak without fear of reprisal (however, scientists are often in danger of severe reprisals), they endorse free thought and disown any imposition of opinions by authority. Particularly the free exchange of information is a value with scientists, since science is a social affair and by its very nature must be cooperative and non-competitive.

These, then, are the values inherent in the practice of science:

1. *Truth is preferred to falsehood.* This does not mean 'What I say is true, and what you say is false,' as it often does in religion and politics. The criteria for truth are impersonal, impartial, and non-authoritative.

2. *Economy is preferred to dissipation of effort.* If two procedures give the same result, or two theories give the same conclusions, the simpler one is chosen.

3. *Free independent thought is preferred to acceptance of authority.* There is no taboo against challenging the most established scientific beliefs. In fact the history of scientific progress is a series of such challenges. Not who you are but what you are saying counts. Scientific activity is democratic.

4. *Agreement is preferred to disagreement.* In fact one of the explicit goals of scientific activity is to arrive at agreements as to what is true.

5. *Cooperation is preferred to competition.* Scientific activity is collective even though the greatest freedom is given to the individual to inquire, to develop, and to mature in accordance with his individual inclinations. The atmosphere of scientific activity is friendly and cosmopolitan.

Out of these preferences an ethical system can be constructed to which a scientist must subscribe if he is to be consistent, and consistency is one of the values inherent in science. But one does not live *in vacuo*. One lives in a social group. And one cannot long subscribe to values which contradict those held by one's group. *Therefore the scientist, if he consistently behaves like a scientist, must attempt to influence people around him to adopt the values to which he himself, as a scientist, subscribes.* Proselytizing is a logical consequence of scientific behavior. The scientist cannot be impartial to social orders or cultures. He must prefer those social orders and those cultures which favor his existence as a scientist and encourage the existence of many scientists.

Thus we seem to have arrived at a contradiction. On the one hand, the nature of scientific activity seems to demand from the scientist complete detachment and impartiality. On the other hand, the nature of scientific activity seems to demand that the scientist have definite preferences and a well defined system of values. If he chooses the first attitude, he must be indifferent to the fate of science and scientists, that is, he must commit intellectual suicide. If he chooses the second attitude, he will be accused of abandoning scientific method.

Some relativists propose the following solution. They concede to the scientist the right to have preferences, but demand of him that he recognize them as merely his personal preferences, that he refrain from speaking of social or ethical values with the authority he enjoys in his own field. Other relativists, particularly some cultural anthropologists, view the whole matter with a sort of resignation. The scientists, they say, have created their own special culture. It is inevitable that they should accept the values peculiar to that culture, so that it is nothing to get excited about. Just another culture came into being, no better and no worse than any other. These relativists too would agree that it would be preposterous to impose the values of the scientific culture on people who do not belong to it.

Seeking the Invariants

A SMALL BUT GROWING number of scientists do not agree with either of these positions. They maintain that some ways of life are better than others. Not merely better from a point of view prevalent in this or that culture but better for *man as a species*. Moreover, they maintain that the better ways of life are those in which the values associated with scientific attitudes toward the world (objective criteria for truth, freedom of inquiry, universal cooperation, etc.) are internalized.

These scientists, who refuse to take the position of complete relativity of values, face a difficult task: to prove somehow that the direction toward the scientific orientation is in a very real sense distinguished from other directions which have been proposed for humanity. They must prove, for example, that more than a choice between equally justifiable assumptions is involved in the choice between the belief in empirically established truths and other kinds of belief such as those based on revelations on the infallibility of leaders or on intuitive and mystic feelings.

In order to prove something, one must assume something. Thus proof is possible only where an area of agreement exists. So the first thing to determine is whether there are such areas of agreement among all the systems of values found in all cultures. It seems that there are. They are to be found in the invariants of human needs characterized by extreme generality. One might make an inventory of them.

1. *The need for physical survival.* This seems to be not only universal among human beings but among all living organisms, all of which behave in such a way as to insure their own physical survival at least for some time. The need for physical survival is more general than the usually listed special needs, such as food, clothing, and shelter. These are simply *means* for insuring physical survival. If, for example, other means could be devised to obtain the energy necessary for living, food could be dispensed with; in some climates clothing is unnecessary.

2. *Identification of self with something more inclusive.* The universal existence of some form of social organization (from family and tribe to the United Nations) seems to indicate that association in groups is an invariant characteristic of human behavior. A more general formulation in terms of 'identification of self with something larger' seems more useful, because on the basis of this need the almost universal presence of religion of some sort could possibly be explained. However 'the need for religion' is an unfortunate expression, because it has the connotation of a need to believe in the supernatural. That belief in supernatural interference in human affairs is not a necessary component of an invariant need is seen in the fact that large numbers of people have abandoned all such belief and yet continue to identify themselves with larger entities. The so-called 'sense of belonging' is another term for this need.

Thus, attachment to family, tribal loyalty, national patriotism, cosmopolitan humanism, and also religions seem all to be expressions of the need of self-identification.

3. *Creativity and self-expression.* In all cultures some form of self-expression is guaranteed to some extent. The invariance of this need seems to be established by psychiatric findings. The importance of 'status' in explaining social and individual behavior indicates that 'status' is an important means for the fulfillment of this need. The creative urge also finds outlets in work or achievement of some kind, without which no human culture exists.

4. *Esthetic experience.* Possibly this need could be considered as included in 2 and 3, but it may also have independent components. At any rate esthetic experience of some kind is found in all cultures.

5. *Security.* From the point of view of the problems facing humanity today, this is perhaps the most crucial of the invariant needs. It is connected with man's awareness of the 'future.' The need for security is the need to know that the other needs will *continue* to be gratified. Man has to a certain extent developed an ability to look into the future. He is at least able to see the *possible* futures. And if he is afraid of what he sees, his ability to utilize his most important survival mechanism (his intellectual capacity) is impaired. The phenomena of 'fear' and 'rage,' common to all higher animals, have obvious survival value for species other than man. When it is necessary to fight or advisable to flee, the physiological changes which are manifested in fear and rage (secretion of adrenalin, rush of blood to the extremities, etc.) help an animal to fight or flee successfully. However, for *modern man* these adjustments have lost their survival value. The dangers confronting a human being living in a civilized community are not of the kind one can run away from or fight with one's fists. One cannot run away from unemployment, from war, from racial discrimination, from mental disease, from loss of prestige, the way one could run away from a crocodile. Yet when man is confronted with frustration, the physiological changes occurring in him are similar to those which once accompanied the threat of imminent physical danger. The physiological response *has ceased to be adaptive.* Hence fear is actually detrimental to human functioning, since it generally inhibits adaptive responses. Security, that is, freedom from fear, is therefore a universal human need.

Attempts at Solutions Are Not Necessarily Solutions

HAVING ESTABLISHED the invariants, the proponent of the scientific outlook views specific cultural traits (which vary from culture to culture) as attempts to secure gratifications of these general needs. Even those needs which are usually considered among the 'basic' are often seen to be derivative. We have already mentioned the need for food and shelter as derivatives of the need for

physical survival. These, however, are fairly constant, being universally indispensable for physical survival. Even so, diets and forms of housing differ widely from culture to culture. Attempts to satisfy other needs result in even wider variation of cultural traits. For a man living in a competitive industrial society, the need for status may be intimately associated with the need to make as much money as he can, but for a man living in a warlike tribe the same need may be associated with head-hunting.

Now attempts to solve problems of gratifying needs are not necessarily the best solutions of such problems. For one thing, some solutions of some problems may jeopardize the solution of others. Thus in our highly industrial society the problem of physical survival has been solved rather well. But the problem of security is constantly becoming more acute, and this is partly attributed to the way industrialization has come about and grown. In other cultures 'security' is assured by the stability of social stratification, but possibilities of self-expression and of creative activity are denied to most individuals.

The scientist (by this we mean a person committed to the values inherent in scientific practice listed above) approaches human values from the point of view of solving the problem of gratifying the *invariant* needs. The solution must be such that the gratification of one need does not preclude the gratification of others.

It would be difficult to deny that applied science and technology have been uniformly successful in solving the problem of physical survival. It is then reasonable to attempt to apply the methods of science to the solution of the other problems — the integration of self, creativity, esthetic experience, and security. How is this to be done? It is done by examining the 'secret of success' of the scientific method of explaining, predicting, and to some extent controlling natural phenomena, since the behavior of man, and therefore his needs, are also a part of nature.

Science was able to provide answers about the world only after a moralistic view of natural phenomena was abandoned, that is, after it became irrelevant to argue that planets had to move in circles, because the circle is a 'perfect' figure, and that man could not have descended from other species, because he has a soul. Science will be able to provide answers about ourselves only after we look at ourselves as we have learned to look at chemicals and machines.

A word of explanation must be inserted here with reference to the arguments of those who would revive vitalistic and teleological attitudes toward living organisms. It is fashionable in some circles to speak of the 'bankrupcy' of behaviorism, in view of the findings of *gestalt* psychology, of the bankrupcy of mechanism in view of the principle of indeterminacy, of the bankrupcy of materialism in view of the formulations of quantum mechanics, etc. One speaks of 'emergent phenomena,' of the non-additivity of components, and, in general, of the insufficiency of the analytic methods on which nineteenth

century science was based. From this standpoint, the invitation to view the organism as a 'machine' seems, to say the least, old-fashioned. The comparison of an organism to a machine would indeed be old fashioned if 'machine' were used in its seventeenth century sense, i.e., a clockwork, or in its nineteenth century sense, i.e., a device for transforming one form of energy into another. We use 'machine' in a more modern much broader sense, i.e., a device, whose behavior is determined by its spatio-temporal structure. This is a fruitful notion. It reflects the hope of *extending* behavioristic notions to include integrative phenomena, of extending classical physiological notions to include the study of organism-as-a-whole-in-environment, etc. The emergence of thermodynamics did not make mechanics obsolete. Nor will the neo-teleological notions escape integration into generalized stimulus-response patterns if the promise of the cybernetic approach to the theory of the nervous system is realized.

THE ORGANISM is a part of nature. Thus everything that happens to the organism is a natural phenomenon and as such is neither good nor bad *in itself*. The pathologist studies a carcinoma not with horror but with interest and asks under what conditions do cells grow and proliferate as they do. The psychoanalyst listening to the verbal output of a patient does not think of him as an incestuous adulterer or a depraved sadist but as an organism functioning or malfunctioning in certain ways because of the history of its interactions with its environment.

This is what is meant by the impartiality of science. But from this impartiality of analysis and contemplation, it does not follow that it is of no concern to the physician whether the patient lives or dies, nor that it is of no concern to the psychoanalyst whether or not the patient learns to resolve his conflicts. Thus the notion that 'science is indifferent to human values' is a misconception. It confuses the *methods* of science (which are impartial) with the goals of science (which are not).

Let us now examine the argument concerning the relativity of values. The crux of the argument rests on the fact that values are culturally conditioned and often the values of different cultures are irreconcilable. The difficulty is indeed unsurmountable if one considers these 'relative' values as fundamental. *If however, they are seen to be the derivatives of basic needs, then they can be evaluated themselves in terms of their relevance to the gratification of these needs.* Taboos may very well have arisen in connection with the need to preserve coherence in a tribe (survival, self-integration, security); but taboos also instill fear and hamper inquiry (creativity). If, therefore, another solution can be found which succeeds in preserving social integrity *without* jeopardizing other values, then it is a better solution. National patriotism may indeed provide gratification of the need for self-identification with a larger entity. But it also jeopardizes security by promoting the division of the world into national

states which engage in almost perpetual warfare. Integration of self with the whole of humanity would be a better solution.

While it is true that in all cultures there are *attempts* made to solve the basic problems confronting humanity, it cannot be said that all cultures solve all problems equally well. Attempts at solutions are not solutions. One must in one's analysis go *back* of the particular channelized manifestation of a desire to the basic underlying need. If one does that, one may find that the acquisitiveness of the modern capitalist and the aggressiveness of a war-like savage are simply *manifestations* of a desire for personal security, as far removed from the successful solution of the problem as a howl is from the elimination of the cause of pain. In a culture which provided efficient means of guaranteeing the security of every one's ego there would perhaps be neither acquisitive savages nor war-like capitalists. One could hope to reduce the amount of 'howling.'

This, then, is the criticism of the argument that since there are many ways of satisfying human needs and since the needs themselves are determined by different cultural matrices, therefore science should refrain from evaluating values and cultures. The notion confuses attempts to solve problems with the solution of problems.

One can tell which solutions are better only by comparing the existing solutions and by thinking up new ones. It is true that none of the existing cultures can lay claim to be superior in *every respect*. It is true that many cultures can lay claim to satisfactory solutions of *some* problems. But it is not true that a better culture cannot be designed, better in the sense that it can solve more problems more satisfactorily. Such a culture would be devoted to active, analytic, conscious solution of problems. It would therefore have to be a scientific culture. It would be a *culture-studying culture* and hence would be of a *different order* than the cultures which it would study. It would be a culture with self-insight. Its values would then of necessity be the values inherent in the scientific outlook, because science would be an indispensable component of that culture.

Just as psychoanalysis is supposed to give a man insight into his own motivations and thus free him from compulsions, so insight into the compulsions of our cultures could give us the freedom to do away with them if necessary.

THE WAY FORWARD is thus indicated. It is the way to self-knowledge. The notion of relativity of values is only a milestone on this way, by no means a goal. For out of the notion of the relativity of values, the basic invariance of human needs emerges. The existing values then appear as various attempts to satisfy those needs and can be evaluated in terms of how well they succeed. The best course to follow is to examine several possible ones, to try to determine the probable outcome of each by objective analysis, free of prejudice, passion, and fear, and then to pursue the course toward the fullest fulfillment of human potentialities fearlessly and passionately.

MEANING IN SPACE

LORING M. THOMPSON *

EVEN THOUGH a picture is worth a thousand words, the invention of printing gave a tremendous impetus to the use of written language. With the development of modern techniques for reproducing illustrations and charts, the graphic language of pictures, charts, and diagrams is now assuming greater prominence, as shown by its current use both in popular literature and in scholarly publications. A full understanding of the graphic language and its grammar should give us a greatly expanded capacity for expression, insight, and reasoning.

Although charts and graphs are being used increasingly today, the simple fundamentals which underlie their preparation and interpretation remain to be elucidated. Although these fundamentals have very broad applications, they are so simple that they might easily be taught in elementary schools.

The Graphic Context of Space

IN SPOKEN and written language the meaning of words is determined by (a) their general definition which is made more specific by (b) the context in which the words are employed. The word 'girl,' for example, has different meanings in 'I'm going to take my girl to the movie,' and 'Our first girl was born last month.' The meaning of any particular word is modified by the words which come before it and after it. In this respect the context of verbal language is 'one-dimensional.' The context of any word must come before or after it. It cannot be above or below as well as before or after, as is the case in the two-dimensional graphic language. Herein lies a distinction between verbal and graphic language.

By its very nature, the graphic language has a tremendous potential usefulness for dealing with both physical objects and abstract ideas. No one will contest the attractiveness and accuracy of a picture compared with a verbal description of a house, a horse, or a pretty girl. What remains to be recognized is that the same language is just as useful for communicating abstract relationships. It gives the thinker increased capacity for fruitful thinking in abstract realms. For example, the familiar organization chart of a business (Figure 1) elucidates relationships that are not readily described in words. These relationships are not physical. They could not be photographed. Yet they are easily depicted in the graphic language.

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Significance of Spatial Positions

ALTHOUGH WORDS are an important part of graphic charts, the words appear in a context of space rather than in a context of sentences. While most charts contain practically no verbs, the absence of verbs does not prevent charts from conveying ideas of existence and action. The verbs are replaced by the spatial relationships of the symbols on the chart. In the case of an organization chart these are the lines which indicate the flow of authority and information between the persons or departments named in the boxes.

The outstanding feature of the graphic language is that its context of two-dimensional space gives significance to the *position* of the symbols. Symbols appearing on a chart are interpreted according to the context that appears on all sides—above and below as well as before and after. On the organization chart in Figure 1, the superintendent is placed above the foreman because he is responsible for supervising the foremen. Horizontally, the chart is arranged according to the flow of work through the shop, starting with the foundry and ending in the assembly department. The reason for placing the foundry foreman to the left is distinctly different from the reason for placing him in the lower part of the chart.

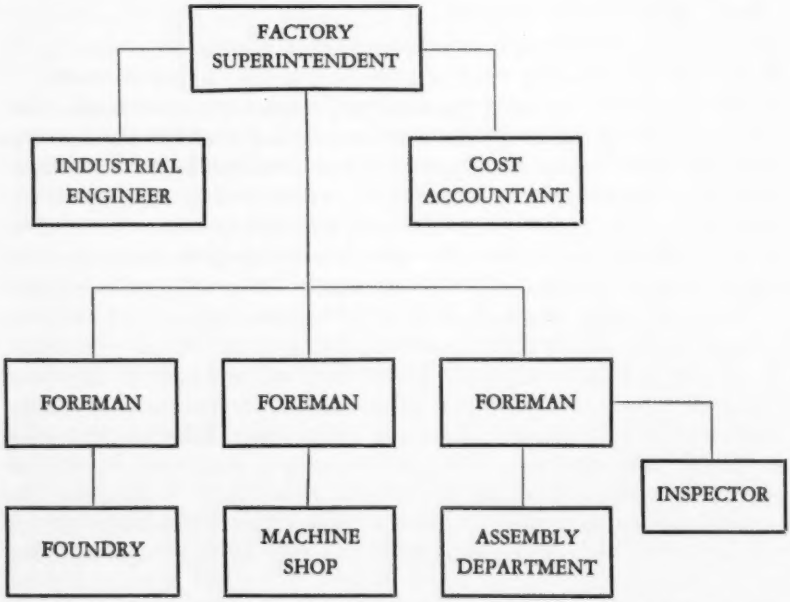

FIGURE 1. Typical organization chart. The relationships or structure of the organization in a manufacturing establishment are depicted by the spatial position of the boxes and the lines between them.

		Technical Ability		
		Excellent	Good	Fair
Sociability	Excellent		Green Hollingson	Talker Slapper
	Good	Stanpipe Brooks Drury	Jones Collins Reed Taber	White
	Fair	Hale Jenkins	Lowell	

FIGURE 2. Analysis of a group of persons from two different viewpoints or bases of classification.

The utilization of the two dimensions of the graphic language may also be illustrated by the listing of people according to two different bases of classification. Let us suppose that the salesmen of an engineering firm are classified in one list according to technical knowledge and in another list according to sociability. On the basis of technical ability, the members of the sales force rank as follows: excellent—Brooks, Drury, Hale, Jenkins, and Stanpipe; good—Collins, Green, Jones, Hollingson, Lowell, Taber; fair—Slapper, Talker, and White. On the basis of sociability they rank as follows: excellent—Green, Hollingson, Slapper, and Talker; good—Brooks, Collins, Drury, Jones, Stanpipe, Reed, Taber, and White; fair—Hale, Jenkins, and Lowell.

In Figure 2, the two 'one-dimensional' lists are combined into a two-dimensional chart. One axis of the chart is the basis of classification used for the first list. The second axis of the chart is the basis of classification used for the second list. The chart makes it easier to select men for particular jobs requiring varying degrees of sociability and technical knowledge. The chart also presents a much clearer picture of these two characteristics of the sales force and the relations between these two characteristics.

The Grammar of Graphic Communication

WHAT IS the fundamental grammar of the graphic language? What rules should be followed for clarity and conciseness? Fortunately the important fundamentals of the graphic language are much more simple than the grammar of English and other verbal languages. The essential point in the grammar of charts is that on each chart the same consistent pattern for locating symbols be employed over the entire chart.

The fundamental graphic grammar is illustrated by Figure 3 in which the caption, 'Receipts,' at the top of the first column applies to all the figures beneath it in the column. No number which describes receipts appears anywhere else on the table but in this column. Similarly, the year 1940 applies to all items on the first line of the table. Nothing occurring in 1940 appears anywhere else on the table except this first line.

Two bases of classification may be used on all two-dimensional tables and charts. On Figure 3 the years listed on the left make up one basis of classification, a chronological basis. The two column headings make up the other basis of classification, the nature of the transaction—whether a receipt or expenditure. One basis of classification is set up horizontally and each of its designations applies to everything above or below it. The other basis is set up vertically and each of its designations applies to everything on the same level.

The scales on a numerical chart, such as Figure 4, serve essentially the same function as the captions and stubs on a table. On Figure 4, all points representing 1948 are placed directly above their number on the horizontal scale. Readers who are familiar with mathematical coordinate systems will recognize that these systems may be applied to charts with many types of symbols, giving symbols distinct meanings according to their location with respect to the coordinate system of a particular chart.

Following the rules of their grammar outline above, all properly constructed charts and tables have a consistency of meaning for the positions of the component symbols. Sometimes this is defined by verbal or numerical scales as in Figures 3 and 4. In other cases the scales are inferred by the reader. On the typical organization chart, as in Figure 1, it is apparent that the chart was drawn in conformity with a theoretical vertical scale of authority running from top to bottom. If such a theoretical scale were not followed, an organization chart could become very confusing, as shown in Figure 5.

We see then that the fundamental principle of graphic language is concerned with the significance of each part of the graphic area. This significance may be explicitly defined by numerical or verbal scales, or it may be apparent from the nature of the chart. In any event, the defined graphic area provides a context that gives each symbol greater meaning than it would have if used in a context of writing or conversation.

Increased Capacity of Language

WITH AN UNDERSTANDING of graphic fundamentals we have greatly increased the capacity of our language. If there is any question about this point, translate into sentences all of the information contained in Figures 1 and 3. Compare the sentences with the graphic representation from the standpoint of attractiveness, clarity, speed of comprehension, and ease of retention.

In a world torn apart by conflicting relationships and viewpoints, graphic

PER CAPITA RECEIPTS AND EXPENDITURES
Treasury Department
United States of America

Year	*Receipts*	*Expenditures*
1940	$ 41	$ 71
1941	57	104
1942	95	255
1943	162	584
1944	320	692
1945	333	719
1946	305	451
1947	300	295
1948	305	268

Source: Treasury Dept. Annual Statements

FIGURE 3. Numerical table. The meaning of the numbers is interpreted according to their position in space rather than in the context of sentences.

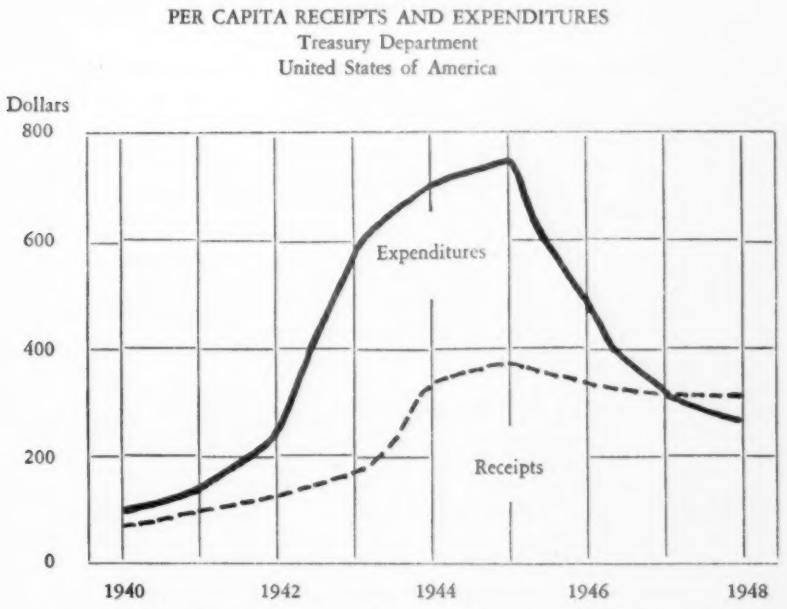

FIGURE 4. Line Chart. As in organization charts and numerical tables, the spatial position of the symbols, lines in this instance, determines their significance.

language should be a useful tool for dealing intelligently with current problems. By using the two dimensions of a chart we may consider simultaneously two different viewpoints or bases of classification. In both physical and social sciences we are becoming increasingly aware that the relations between things are more important than the things 'in themselves.' Indeed, Korzybski has said that relations and structure are the only content of knowledge. Graphic language aids immensely in thinking about problems in structural terms.

Perhaps more important than the capacity of graphic language to facilitate communication is its capacity to facilitate insight and reasoning. Man visualized long before he verbalized. In comparison with visualization, verbalization is a more laborious process of translating ideas and relationships into a code of words and sentences. According to psychologists, a great deal of man's thinking is visual rather than verbal or at least a combination of the two. With an understanding of graphic language, the path is opened for more natural and direct thinking, even about the structure and relationships of abstract ideas. With the increased capacity of graphic language as a part of one's thinking, it naturally

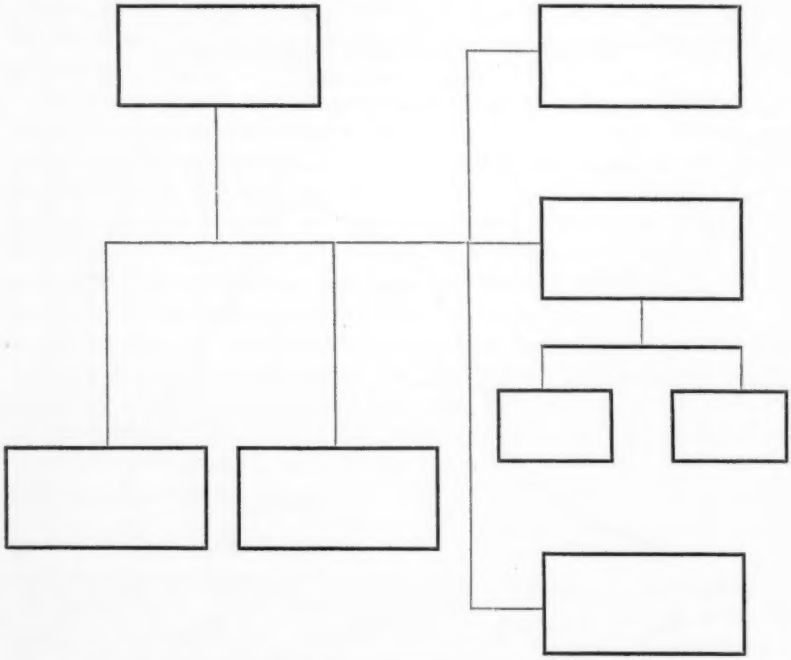

FIGURE 5. Confusing pattern for an organization chart. Are the boxes on the right intended to be subordinate to the box in the upper left?

becomes the medium for personal understanding of complex matters and also the medium for initial insight leading to new fields of scientific knowledge.

Figure 6 shows that three important forms of expression—graphic, oral and written—have certain elements in common. If this were not true, it would be just as sensible to place 'enunciation' in the first line opposite 'pause,' for example. More rigorous proof of the common elements would be difficult to establish, but an initial insight of their possible existence is worth following up to see if any useful ideas may be associated with it.

EXPRESSION

Graphic	Oral	Written
Space	Pause	Paragraph
Size	Volume	Weight of type
Refinement of line	Enunciation	Italics

FIGURE 6. Verbal table of a comparison of techniques of communication. Are the various techniques simply applications of all-inclusive fundamental principles?

COMMUNICATION

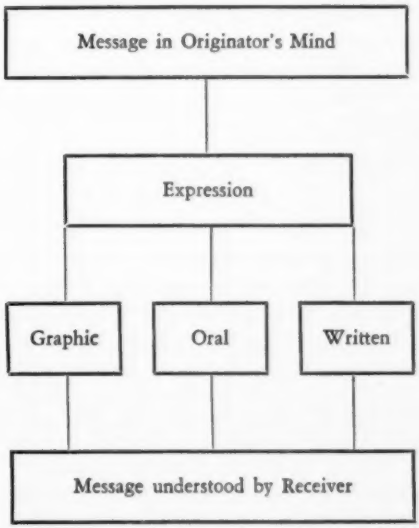

FIGURE 7. A graphic definition of communication. Effectiveness of communication may be increased by the coordination of graphic, oral and written expression.

If there are several different forms of expression which involve common elements, then the chances for effective communication of a message would be increased by the coordinated use of all channels of expression. Some persons may respond more readily to the graphic form of the message and others to the oral form. If the common elements in each form of expression have been applied successfully, then the different forms should be mutually reinforcing. In the cinema, for example, the tempo of the music reinforces the emotional climax of the plot. In an ordinary conversation, a person's gestures should be in keeping with his words. If they are not, then a personality disturbance may be indicated. Although some artists scorn the use of words to elucidate and reinforce the message of their paintings, teachers find they must provide both verbal and graphic explanation so that students may achieve a greater appreciation of the artist and comprehend his message. The concept of coordinated expression for effective communication is expressed graphically in Figure 7.

The Problem of Language

OF COURSE, graphic language, like all others, has its limitations. At best, language is only a link between the reality of the outside world and the concepts or thoughts in people's minds. Students of semantics have pointed out that strong emotional reactions are often caused by words alone. In many cases an emotional blockage may be minimized by greater use of graphic language. For the representation of physical objects, the structure of the picture-symbol bears some resemblance to the object being portrayed—the shape and proportions of the picture are similar to those of the object—whereas verbal representation is entirely abstract and symbolic. To a lesser degree, the use of spatial axes clarifies abstract relationships and avoids some of the dangers and difficulties in bridging the gap between symbols and reality.

For improved understanding, there should be an alignment between (a) outside things and events, (b) the language used, and (c) a person's evaluations of things and events. To insure understanding and rapport between two people, both of them should have the same alignment, as indicated in Figure 8. Absence of this double alignment readily leads to confusion. People often regret that they have said one thing when they meant another. Current diplomatic negotiations have indicated that words of agreement do not necessarily mean agreement on basic definitions or action. Witness the various interpretations placed on 'democracy.' There is no magic language that can bridge the gap between things, symbols, and thoughts. This paragraph has attempted to define the problem more clearly by coordinated use of graphic and written language.

One of the limitations of graphic language is the difficulty of using more than the two-dimensional context of a flat page in order to include a greater number of viewpoints on the same chart. This difficulty is not insurmountable from a technical standpoint since there is no theoretical limit to the number of

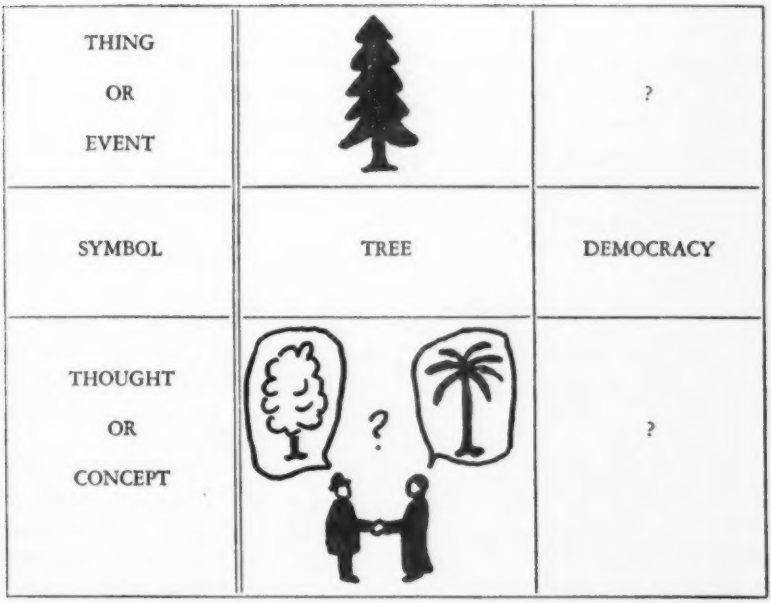

FIGURE 8. A graphic portrayal of the problem of language of bridging the gap between things and thoughts. It is difficult enough to achieve this rapport with respect to simple physical objects, let alone abstract ideas such as democracy, justice, and so forth.

axes which may be conceived mathematically. Techniques have been devised for showing on flat pages maps of three-dimensional mountains. Similar techniques may be employed for the graphic portrayal of the relationship and structure of abstract ideas but with some sacrifice of popular appeal and clarity. Nevertheless, the joint study of mathematics and graphic representation promises to increase the effectiveness of everyday language for both thinking and communication.

We do not properly live in these days, but, everywhere, with patent inventions and complex arrangements, are getting ready to live; . . . The end is lost in the means. Life is smothered in appliances. We cannot get to ourselves, there are so many external comforts to wade through. Conscienciousness stops half way. Reflection is dissipated in the circumstances of our environment. Goodness is exhausted in aids to goodness, and all the vigor and health of the soul is expended in quack contrivances to build it up. . . . We are paying dearer than we imagine for our boasted improvements. FREDERIC HEDGE in the *Dial,* October, 1840.

THE MEANING OF MEDICAL DIAGNOSIS

LESTER S. KING, M.D.*

RECENTLY, IN A CLASS in pathology, a medical student asked, 'How does the pathologist know if he is correct in his diagnosis?' A titter of laughter swept the class, for the casting of doubt upon authority can appear rather comical. Nevertheless, the question is a more profound one than is usually encountered in medical school, and is deserving of detailed examination.

There is no special need to distinguish the pathologist from other practitioners of medicine. The pathologist, to be sure, makes diagnoses largely on the basis of microscopic examination of diseased tissues, and is not primarily concerned with treatment. The clinician, on the other hand, makes diagnoses on the basis of history, physical examination, accumulated laboratory data and X-ray findings, and is fundamentally concerned with treatment. Nevertheless, the problem of diagnosis can be generalized, to include all practitioners of medicine.

Diagnosis is a process by which a given individual is assigned to a given class, or the disorder from which he suffers is subsumed under a certain concept. Thus, 'This is a case of measles,' 'That is a case of appendicitis,' represent specific judgments, that the disorder from which John Doe suffers is to be subsumed under the general concept of measles, or that the pain in the belly of Richard Roe is the workings of an example of appendicitis. Once this assignment of a given case to a given category has been made, there is the deductive conclusion that whatever is true of the general category is also true of the particular example. If measles is caused by a specific virus, it is implied that this particular young patient has been attacked by that virus; if one attack of measles confers lifelong immunity, then this patient, if the diagnosis is correct, will have a lifelong immunity. If one out of 5,000 cases develops pneumonia, then this patient has a 1 to 5,000 chance of developing pneumonia. We are not asserting that young John Doe *will* be immune to future attacks of measles or that he *will* develop pneumonia. We are saying that *if* the concept of measles signifies these facts, and *if* John Doe has the measles, *then* these statements, to the best of our knowledge, will apply.

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Diagnosis as Extrapolation

THE PROBLEM at issue is, does little John Doe in fact have the measles? The process of deciding may be compared to viewing a moving picture. A motion picture film reveals an organic sequence, that is to say, a definite course of events, in which one part has some definable relation to other parts. There is ordinarily a plot, with a hero, a villain, and more or less relevant accessories and extras. The physician who attempts to make a diagnosis may be compared to a spectator who, walking into a movie theatre and viewing a segment of the film, tries to guess the plot, predict the outcome, and name the category to which it belongs. Since diseases, like movies, fall into certain general groups, this process is often not too difficult. An experienced movie-goer, on walking into the middle of a picture, and observing a cowboy, a horse, a few Indians, and a villainous looking individual with a mustache, can make a shrewd guess as to the beginning of the picture, which he has missed, and an accurate surmise of the outcome, which he has not yet seen. All this he can do on the basis of a few minutes of observation, because 'Westerns' fall into a pattern with which he is familiar. Similarly many diseases are so characteristic that the experienced physician, on the basis of observing a brief span of its natural history, can predict the outcome, as well as identify the villain.

On the other hand, some movies, like many diseases, are subtle, and their course is not immediately apparent. Then the movie-goer must see a considerable stretch of film before he can anticipate the course and ending. The physician, before he can fit the disease into a known category, must similarly have a period of observation, fortified by special tests and diagnostic procedures.

Sometimes the disease is so different from preceding experiences that no diagnosis or categorization can be made until the 'plot' rolls to its appointed end.

Diagnoses, whether right or wrong, are accomplished by some flash of recognition, based upon previous knowledge. This is comparable to recognition, say, of a personal acquaintance, and may be similarly analyzed. When we see approaching us on a street a woman who wears a coat like that owned by Mrs. A, a hat like the one commonly worn by Mrs. A, with facial lineaments resembling Mrs. A's, we bow and say 'Good Morning, Mrs. A.' But from time to time, to our embarrassment, the person is not Mrs. A.

Our concept, or category, of Mrs. A is comprised of many factors, such as size, coloring, demeanor, expression, costume, and the like. These may be symbolized as characteristics a, b, c, d . . . . n. It is the totality of these factors which constitutes the category. Yet for purpose of recognition all are not necessary. There is a process of synecdoche, so to speak, a substitution of the part for the whole, so that when we encounter the part, we infer the totality. If the complex, A, is constituted by a, b, c, d, e, ... n, and we recognize a, b, e, and g, we make an inferential leap to assume that we are dealing with the entire complex.

In terms of our analogy, we tentatively identify Mrs. A, at a distance, on the basis of preliminary factors a, b, and c; on coming closer, we observe (or verify) factors d and e; on meeting her, and conversing, we verify factors f, g, h, etc. There is then sufficient verification that we have the utmost confidence in our judgment, 'This is Mrs. A.' We would have no hesitation, on such basis, of reporting 'I met Mrs. A on the street today. She looked very well.'

On the other hand, assume that we saw a person at the wheel of an automobile, driving by quite rapidly. The hat and the general coloring were similar to Mrs. A's (factors a and b), but we were not able to verify other features. On the basis of this information would we be justified in reporting 'I saw Mrs. A drive in a new car today'? To diagnose the driver in the car as Mrs. A might indeed be correct, but on the other hand might be false. If, for instance we later learned that Mrs. A had gone to Europe the week before, our diagnosis 'Mrs. A in a new car' would be proved incorrect. There would be an inconsistency between the assertions 'Mrs. A was in a new car' and 'Mrs. A has recently gone to Europe.'

This type of analysis is readily applied to the field of disease. In clinical medicine diagnoses are constantly propounded on the basis of fragmentary bits of evidence derived from careful history, physical examination, and laboratory data. Of the enormous mass of data so accumulated, the physician sorts out the relevant from the irrelevant, and ultimately makes a diagnosis, which by its nature carries a certain predictive value. If the course of the patient's illness harmonizes with the known features of the disease category, there is no inconsistency, and the diagnosis may be deemed substantially correct. If the course of the illness is inconsistent with the general concept of the disease, that is, inconsistent with the contents of that specific category, then one of two things follows. Either the diagnosis was wrong, or the concept was wrong.

The point of the discussion, the 'rightness' or 'wrongness' of the diagnosis, revolves around the terms 'inconsistency' and 'concept.' It is necessary to define these more clearly.

Disease as Abstraction

A DISEASE CONCEPT is an abstraction. That is, from a variety of individuals there have been selected certain specific features, with total neglect of all other features. Those features which are selected or abstracted are considered relevant, what is neglected is deemed irrelevant. The history of medicine is the successive abstractions by various observers, who improve one on the other by a more careful screening of the relevant from the irrelevant.

In the second century A.D. Aretaeus seized on the fact that some sick children presented a raw ulcerated throat covered with grayish matter. The fact that some of the children were tall, some short, some dark, some blond was

deemed by him irrelevant in this context. Thanks to Aretaeus' insight into what was and what was not relevant, the disease now known as diphtheria was first defined.

This early concept was rather vague. Observations of succeeding centuries made the concept richer, more complete, but also more confused. For the condition of so-called 'croup' was not at first clearly distinguishable from diphtheria. Only with the discovery of the specific *Corynebacterium diphtheriae,* did the category of 'diphtheria' take on sharpness and clarity. When a definite causative agent is known, one which can be readily identified, then the concept becomes precise. At present the category means an illness, of somewhat variable nature, in which a specific bacterium, recoverable and identifiable, is the causative agent. Where this organism is not recoverable and identifiable, the case cannot validly be assigned to the category diphtheria.

However, the category diphtheria means vastly more than an illness caused by a specific bacterium. As in all infectious diseases the discovery of a causative agent immediately raises a host of problems in immunology, epidemiology, chemistry, pharmacology, and the like, in ever-widening circles. Immense amounts of data have been accumulated. In the broadest sense the category diphtheria is rendered meaningful by all the medical knowledge, from a variety of separate disciplines, that bears on the disease so designated. Some of these factors are well established; others are more shadowy and hypothetical. But the sum of all such factors are included in the totality, or concept, known as diphtheria.

Disease Concept and Diagnosis

ALTHOUGH the total meaning of the concept diphtheria is so enormously broad, for purposes of diagnosis in which we are now interested, many of these data are not pertinent. The cataphoretic pattern of antitoxin, or the electron microscope image of the bacillus, are of interest, but are not necessary for the purpose of diagnosis. In other words, every disease concept has a core of essentials, without which the diagnosis cannot be made, and a surrounding fringe of data which is not essential for the diagnosis. For ***knowledge*** of the disease, the entire category is relevant. For *diagnosis* of the disease, only the central core is necessary.

The concept of 'malignant tumor' is so enormously broad that volumes have been devoted to analysis of its meaning. Let us assume that the central core, or essence, of this concept is, 'a new growth (neoplasm) which, if not totally removed, will invariably spread aggressively to kill the patient in time.' If now a partial biopsy of a breast lesion in a young woman is diagnosed as 'cancer,' and yet, without further treatment the patient lives out her allotted three score years and ten, with no further evidence of neoplasm, it is quite possible that the diagnosis is wrong. That is, there is an inconsistency between the

essence of the diagnostic category and the actual temporal sequence of events. Either the diagnosis was wrong or the essence of the diagnostic concept was wrong.

Further analysis might show that this particular case was an example, not of carcinoma but of 'sclerosing adenomatosis,' a benign condition that can be confused with malignancy by the unwary. The separation of the truly malignant state from the benign counterfeit represents a clarification of the diagnostic category 'cancer.'

On the other hand, let us consider a case of different nature, namely, a malignant tumor of the type known as 'sarcoma.' Suppose a patient has a rapidly growing tumor which is diagnosed on biopsy as a sarcoma, a diagnosis which follows the definition of malignant tumor given above. Yet in this particular case, without any further treatment, the tumor 'spontaneously' regresses and disappears. In such an instance the sceptical might say the diagnosis is incorrect. A malignant tumor, if not treated, will invariably kill the patient. But the more thoughtful may say, possibly, the definition of 'malignant tumor' is wrong. Perhaps fatality is not the 'invariable' outcome, and 'invariably' may need to be deleted from the definition, so that recognition can be given to humoral or other factors which may cause such a neoplasm to regress.

Physicians and Bookmakers

IN SUCH instances an apparent inconsistency leads to re-examination of the category to which the patient was assigned, and the meaning of the category may correspondingly be altered. That is to say, because of inconsistency between a given case and the generally accepted concept, not the diagnosis but the hitherto accepted concept may be revised. Such, in essence, is progress in medicine.

A harmony between the individual case on the one hand and the entire disease concept on the other, is an inference, founded upon necessarily limited information. That this inference is valid, i.e., that that there is genuine harmony and not inconsistency, becomes increasingly more probable in proportion to the degree of verification. Thus, a simple diagnosis may have a probability value of astronomical proportions. The physician may be justified in asserting: 'This diagnosis I consider to be correct, with odds of 100,000,000 to 1.' No prudent person would wish to bet on the short end of the odds, and for practical purposes this constitutes certainty. On the other hand, in more difficult cases the odds on harmony between the particular instance and the disease concept would be much shorter, say 5 to 1, 10 to 1, or even only 2 to 1. Such diagnoses may well be questioned, and under any circumstances do not constitute certainty. The physician who propounds diagnosis, can be regarded as a bookmaker, who, on the basis of his observations, can offer approximately mathe-

matical odds, that the predictive value inherent in a disease category will actually apply to a particular individual case.

In clinical medicine and in surgical pathology, verification of a diagnosis can generally be made by recourse to future events. Events as they unroll may prove harmonious, or else inconsistent, with the diagnosis offered. The final touchstone, presumably, is the autopsy, which is supposed to demonstrate the truth or falsity of the clinical diagnosis. In general this is the case, and the pathologist demonstrates by post-mortem examination the existent disease which may or may not have been diagnosed during life. From the standpoint of the clinician the pathologist's dictum, based upon the autopsy, is final. But the initial query with which this essay began, still is intrusive. How does the pathologist know if he is correct?

In autopsy diagnosis a different frame of reference must be used. Whereas, while the patient was alive, the future course of events was fundamental in the process of verification, in autopsy pathology the reference is in large part to the past. The essential point is still the same, namely, are the features in this particular case consistent or harmonious with the concept of the disease *as generally accepted by competent pathologists?* Here too the distinction between the central core of the concept and the entire meaning of the concept must be kept in mind.

Two cases may be illustrated. Patient X died of carcinoma of the colon. For 'correctness' of the diagnosis, the incidence of cancer among the Chinese as compared with the Malayans, or the behavior of the tumor cells when transplanted into the anterior chamber of a rabbit's eye, are not relevant. Such data are of interest, and pertain to the fringe of the concept 'carcinoma of the colon.' But they do not form the generally accepted core. Instead, the diagnosis rests upon a readily determined gross and microscopic pattern, observed many thousands of times, and accepted by all competent observers as forming a definite entity. Recognition that case X follows the accepted pattern and the absence of any inconsistency therewith are the pathologist's warrant for his diagnosis.

Case Y, on the other hand, dies with an enlarged heart, which shows calcification and rigidity of one of the valves. The diagnosis, according to one authority, may be an old rheumatic fever. But other authorities may deem the condition the result of a 'degenerative' process akin to arteriosclerosis. We find, on analysis, that there are no clear-cut, generally accepted criteria by which these diseases can necessarily be distinguished. The gross and microscopic examination may yield data which are capable of diverse interpretation. The same case, when examined by one observer, may lead to one diagnosis, when studied by another observer to a quite different diagnosis. Which is correct? Such a question becomes meaningless. Each authority is, in effect, saying as follows: 'There is no universal agreement about the diagnostic categories involved — the concepts are

too indefinite to admit of entire consistency in the subsumption of this case under any one of the categories. There are some points of inconsistency regardless of which diagnostic term we apply. *My own studies have led me to ignore some inconsistencies as irrelevant.* Hence I believe that category A should apply. My colleague, who also has great experience, believes that those points of present inconsistency which I regard as irrelevant are actually quite important; while some features that I regard as important he believes are of no great consequence. He thinks that category B should apply to this case. It is possible that time will establish the inconsistency of either his viewpoint or mine. Until such time, we are not justified in using the term 'correct,' but can only speak of 'moderate probability based upon the experience of especially competent observers.'

In other words we are forced back upon the analogy of the gambler at the race-track. To be sure, we do not know when, if ever, the race will actually be run. But since we wish to choose a horse, and do not rely on our own experience, we must perform a 'calculus,' weighing the experience and knowledge of the different bettors with the odds that each is willing to offer. Majority rule does not apply. Ten people can concur on backing a losing horse, and the long shot winner have only a single backer. But until there is a definite winner, that is to say, until a concept is defined with unequivocal clarity, then it is the part of wisdom to rely on recognized authority. The diagnostician who plays the long shot in the face of general opinion does so at his own peril.

'Correct' Diagnosis and Useful Diagnosis

DIAGNOSIS, of course, is not the prerogative of physicians. Laymen are constantly propounding diagnoses, and constantly using diagnostic terms. Under various circumstances we hear 'I have a fever,' 'You have a pimple on your nose,' or 'He has weak kidneys.' Fever, pimple, weak kidneys are all diagnostic categories, each with a central core of meaning and peripheral fringe of relevant data. The essence of a fever, to laymen and physician alike, is a body temperature above the established norm. A pimple fundamentally is a small reddened lump of the skin. Weak kidneys is a disease entity whose central core of meaning is frequency of urination. The layman who self-diagnoses a condition such as this is propounding diagnosis just as is the most learned physician who reaches a maturely deliberated conclusion. Moreover, the layman's diagnosis is almost always correct.

It may be objected, when the layman declares that he has a pimple, and his judgment is asserted to be correct, that there is merely a tautology, that the layman is correct by virtue of a definition. This is not quite a valid objection. We still have the essential features of diagnosis as discussed in the first portion of this paper, namely, the assignment of a given individual into a class.

The class is distinguished by virtue of a particular definition, and the explicit judgment of subsumption is made.

The definition of a disease entity need not be in complex or esoteric terms. All that is required is a segregation or abstraction, from a number of particular cases; a *meaning* which may be applicable to a new case. This meaning, as discussed above, exhibits a narrow almost invariable core, and a broader, more fluid periphery. The term 'pimple,' for example, means considerably more than a small red lump. It means a lesion which may arise from a wide variety of different causes, which may go away spontaneously or may persist indefinitely, which may respond to any one or to none of a variety of different treatments. Any and all of these factors, and an indefinite number of others, are all implicit in the category 'pimple.' Consequently, when the diagnosis of pimple is made, the *sine qua non,* or definition in the narrow, tautological sense is that a small red lump be present. But the definition in the broader sense includes a vast quantity of ill-assorted data.

So ill-assorted and confused are the data that no precise ordering of thought, no prediction of future consequences, no harmony or consonance with precise data of the past are possible. In other words, the diagnosis of pimple lacks *precision.* Because of the lack of precision, 'pimple' is less useful than, say, 'acne.' But from the strictly formal standpoint, from the view of predication of either 'correctness' or 'incorrectness,' that is to say, *qua* diagnosis, the concept 'pimple' is every whit as good as 'acne,' or 'tuberculid.'

It must be emphasized that there is no *formal* difference between the vague and the exact. In the exact diagnosis the definition is more rigorous, complicated, and discriminating, whereas in the more general term discrimination is less. This, of course, is merely a matter of classification, of superordinate and subordinate categories. A patient can come to the doctor and say, 'I have a cold in the chest.' The physician may, after suitable examination, re-define the patient's diagnosis, in one of a number of ways. He may, for example say, 'You have a congestion in the chest,' 'You have an inflammation of the lungs,' 'You have pneumonia,' 'You have lobar pneumonia,' 'You have lobar pneumonia due to type XVII pneumococcus.' All of these diagnoses, including the patient's, may be correct. There has been a progressively detailed classification, in which each of the steps discriminates one condition from alternative conditions.

The more detailed the classification, the greater the chance of error. If after the judgment of this physician, 'You have lobar pneumonia due to type XVII pneumococcus,' future tests reveal, not type XVII but type XIX, then the physician's diagnosis was incorrect, while the laymen's vague unscientific diagnosis of 'cold in the chest' remains unchallenged. Diagnoses may, indeed, be partly correct, partly incorrect. It so happens that, today, the difference in type of a pneumococcus infection plays little role in treatment, although twenty years ago such difference might have been quite significant.

When a patient seeks medical advice, it is not necessarily a *correct* diagnosis which is wanted, for the patient can frequently make that himself. No. What is wanted is a *useful* diagnosis, a diagnosis which can find some reflection in treatment. And not merely any sort of treatment, but treatment which will alleviate the condition. The corner druggist, the barber, the grandmother, the osteopath, can often recommend treatment which will be successful. Such treatment is always propounded on the basis of implicit or explicit diagnosis, usually rather vague, broad and general.

Medical practitioners, frequently, are satisfied with the broadest and most general terms. Is a given illness infectious or not? Is a given tumor benign or malignant? Such broad, crude, rough-and-ready categories, as 'infection,' or 'malignant tumor' have central cores of meaning that are very readily grasped. The categories can indicate to the doctor merely whether penicillin should be administered or whether an operation should be radical or conservative. This type of diagnostic acumen is only very slightly removed from the 'sour stomach' or 'weak kidneys' of the layman.

Practitioners of this type we say are lacking in scientific interest. They are reminiscent of the practice of medicine alleged to occur at some army outposts during the late war. It has been said, in jest, that at any sick call all diseases were divided into four groups; those treated by aspirin, those treated by cathartics, those subjected not to medical but to disciplinary measures, and finally those cases receiving further study. The latter group, it has been said, was a null class. At any rate this classification of disease bears a strange resemblance to the nosologic schema of some physicians, namely, those cases in which penicillin is given, those in which operation is performed, those in which a consultant is called in, and finally, those subjected to thoughtful analysis.

Such physicians, who have a total disregard for subtleties of classification and precision of diagnostic concepts, are not far removed from the layman who thinks in terms of pimples and sour stomachs. With all their vagueness they are very frequently 'correct,' simply because they are content to remain at the superordinate level, where all is vague, rather than take the trouble to make careful discriminations, in the complexity of which error may intrude.

Luxuries of Subdivision

ON THE OTHER HAND the process of subdivision can be carried to extremes. Thus, some doctors insist on subdividing categories and making fine discriminations among disease entities, until medical students become alarmed and aghast. This type of analysis, especially prevalent in older text-books, still persists to some extent in, say, contemporary dermatology. But unless subdivision finds a reflection in genuine predictive value, it remains an intellectual luxury on the descriptive level, existing as a disarticulated bit of knowledge. If some

day this bit is joined up into a larger whole which is practically useful, it will leave the class of academic luxuries and will belong in the work-a-day equipment of the practicing physician. Frequently, although by no means always, it happens that within any given category the more complete the description, the greater is the chance for increased predictive, prognostic, and therapeutic accuracy. For this cogent reason, as well as for the subtler demands of pure science, the analysis, refinement, and subdivisions of our diagnostic categories are well worthwhile for their own sake. In the course of time, categories are found to be malleable, so that with the accumulation of experience compromises are made. Purely pedantic excrescences are discarded, while jumbled, confused, and illogical groupings are moulded into subdivisions that more nearly meet both logical and practical demands.

In any attempt at logical classification a personal equation invariably enters. Just as all individuals are born either a little 'conservative' or a little 'liberal,' so all people are fundamentally either analyzers or synthesizers. Some workers choose to break down, subdivide, and analyze, emphasizing the differences by which various subdivisions can be distinguished one from the other. Others tend to see similarities, to obliterate differences, and to emphasize the common rather than the unique factors.

A scale can be set up, ranging in continuous manner from the crudest type of analysis, a 'fever,' an 'infection,' a 'malignant tumor,' to the opposite extreme of minute detail covering every imaginable feature. Somewhere along that line each physician chooses a place for himself, and decides how meaningful his concepts must be, how clear, detailed, precise, or orderly. By his position on that line he can become known as a crude, thoughtless practitioner, or a meticulous impractical pedant, or something in between. The more crude he is, the more often will he be 'correct,' the less often will he be useful. Mere 'correctness' is not of value, when secured at the expense of scientific acumen and practical efficiency. The great advances in medicine have been made by those who were only partially correct, who elaborated concepts which others could more clearly define.

'Words, words, words! They shut one off from the universe. Three quarters of the time one is never in contact with things, only with the beastly words that stand for them—and often not even with those, only with some poet's damned metaphorical rigmarole about the thing.'—ALDOUS HUXLEY, *Point Counterpoint.*

PHYLOANALYSIS AND GENERAL SEMANTICS

CHARLES I. GLICKSBERG *

PHYLOANALYSIS, of which the late Dr. Trigant Burrow was the leading exponent, is a body of psychological theory dealing with the internal universe of behavior, the basic reactions that motivate men's feelings, thoughts, and actions. Burrow held that it was humanity's acquisition of language as a tool which caused men to deviate from the biological norm and led them into their present pathological condition of habitual projection and an exacerbated self-consciousness. Each individual jealously cherishes his own prejudices, his own moral values, as absolute; each looks upon himself as supreme and absolute. In this psychopathological state, the human species has lost its original unitary purpose and its organismic pattern of behavior. No longer reacting organismically, men react in terms of such symbols as 'right' and 'wrong,' invariably judging each issue in the light of personal preferences and judgments. Organismically, the human race is one; symbolically, however, in terms of 'I' and 'thou,' 'we' and 'they,' we are separate. Reliance on the separative symbol has prevented man from responding instinctively as a unified organism. Instincts, displaced from within the organism as a whole, are confined within the cerebral segment. Thus feelings, which have their physiological correlates, are perverted.

This, briefly and baldly summarized, is the heart of the phyloanalytic doctrine. It is clear at the start that, though the terminology is somewhat different, it has much in common with general semantics. And yet in his latest work, *The Neurosis of Man,* published not long before his death, Trigant Burrow emphatically disassociated himself from the teachings of general semantics. In fact, he went out of his way to stress the shortcomings and errors of the semanticists in their preoccupation with words. The passage is worth quoting in full:

> It is not the word, then, but the flesh that calls for indictment in the matter of man's disorder of behaviour. The semanticists, I believe, have laid undue stress upon the ineptitude of the word. They have failed to see

* Dr. Glicksberg, a contributor to *ETC.* since Vol. I, No. 1, is associate professor of English at Brooklyn College and also lectures at the New School. He is the author of *Walt Whitman and the Civil War.* In connection with his present discussion of phyloanalysis, attention is called to S. I. Hayakawa's review of *The Neurosis of Man* and Dr. Trigant Burrow's reply to the review, which also appear in this issue. Attention is also called to Dr. Burrow's 'Phylobiology: Behavior Reactions in the Individual and the Community,' *ETC.* 3.265-278 (Summer 1946).

that it is the organism as a whole whose reaction is involved, whose function is misplaced. They have failed to see that it is man's total identity as a phylum that has been dislocated as a result of the systematization of affects lying back of the symbol. In the final analysis it is neither the 'weakness' nor the 'unwillingness' of this or that one's flesh or spirit that has got us into trouble. The difficulty is phylophysiological. For the function of the flesh or organism is now autopathic and divided within man as a species, and the 'spirit' or the organism's outer mental and verbal expressions are necessarily autopathic and divided also.

I would not make all this ado about the wide disparity between the methods of General Semantics and Phylobiology, were not Korzybski so determined to proselytize me on the ground that 'we are saying the same thing.' Perhaps we are. But do our organisms *feel* the same thing? For I hold that the problem with Korzybski, as with myself, is not our mental reconcilability with one another. Rather it is the common recognition of our common social neurosis, of a disorder of feeling common to man, and of the irreconcilability of every individual's affective insistence upon the uncommon nature of *his* particular 'I'-persona. The 'I'-persona with its fallacies of motivation will continue to prevail until man—man as a species, and not merely a few behaviour specialists—assumes the burden of his own behaviour-problem.[1]

Yet the very disclaimer, so earnestly set forth, only serves to deepen the suspicion that phylobiology and general semantics have much in common, certainly in relation to the pathogenic disturbances introduced by the projection of symbols. It is not likely that Trigant Burrow could have read *Science and Sanity* carefully if he accuses general semantics of laying undue stress upon the ineptitude of the word. The whole point of general semantics is to disclose how the organism-as-a-whole is involved in the use of language, and how affective disturbances distort our deployment of the symbol. Throughout his career Korzybski sought to wean men away from verbal thinking and feeling, from enslavement to stereotypes, preconceptions, dogmas, abstractions that have been uprooted from the earth of experience. His aim is to liberate human energy, to enable man as a time-binder to achieve greater predictability and control over his environment and his actions and to establish sanity in the management of his life. The purpose of the techniques described in *Science and Sanity* is to lead the student to apply them empirically to his own life on the *non-verbal* level.

No greater mistake can be made than to charge general semantics with being obsessed with purely verbal formulations when its aim is to overcome the habit of verbal 'knowing,' 'intellectualized' apprehension. The extensional method of general semantics is non-verbal as well as verbal, empirical as well as theoretical. A student may master the whole technical vocabulary of general semantics, use it with seeming precision and effectiveness, and yet be profoundly 'ignorant' in a psychophysical sense. It is the living reactions of the organism that must be changed. Both Korzybski and Burrow recognize how much of a help language

[1] Trigant Burrow, *The Neurosis of Man* (New York: Harcourt, Brace, 1949), 163-164.

has been in the evolution of mankind; they are at one, too, in pointing out what a heavy price has had to be paid for the use of the symbol and how it has recoiled disastrously upon its inventor. Though the two may differ in the conclusions they draw and the remedies they suggest, these differences should not blind us to the striking and substantial similarities, and it is the similarities as well as the differences that must be analyzed if we are to effect a fruitful rapproachment between the two disciplines.

LIKE KORZYBSKI, Burrow maintains that man's disturbances in his organismic behavior are both physiological and phylic, and that they cannot be cured by theoretical or verbal means. The conditioning to which man has been subjected for many centuries has modified his neural function, his internal behavior. The biological core must be reached if the egocentrism and absolutism of the individual and collective psyche are to be overcome. For Burrow, what represents a consistent biological norm of behavior is the solidarity of the individual with the species. Therefore, the phylobiologist must get beneath the superficial symptoms, beneath the deceptive facade, the mask of sanity, of the social neurosis. The neurology of behavior disorders must be treated, not their verbal manifestations.

Still, if man's solidarity with the species was broken by the distorting intervention of the symbol, is it not helpful to study the symbol as a revealing symptom, one among many, of the disorders of neural behavior? There is no reason why these symptoms should not enter into the total picture of what Burrow calls 'the madness' of the community. At any rate, what is important, fundamentally, is not an intellectual adjustment but a transformation of consciousness and sensibility. It is the life of feeling that must be renovated. So far there is little that Burrow has advanced which is in serious conflict with general semantics. Burrow has no intention of underestimating the value of the symbol, which has contributed immeasurably to man's adjustment. What he demanded is that it should not be abused. Integration is to be achieved by the elimination not only of false reasoning but spurious methods of feeling.

AS FAR BACK as 1927, Burrow, breaking away from the Freudian camp, attempted, in *The Social Basis of Consciousness,* to formulate a societal psychology which would apply to the organic needs of human life. In this organic psychology, the term 'organismic' is used to refer to the feelings and reactions common to the social body as a coherent, integral organism. We have come to call 'normal' our unconsciousness of our deepest organismic feelings. Having lost touch with our deepest feelings, we are driven by spurious passions—inner conflicts and compulsive drives—which break out periodically in collective seizures such as panics, depressions, political debacles, racial persecution, and war.

Burrow is extremely close to the work of the general semanticist when he points out that though men may think logically, there is no warrant that they

will act logically—a point which Korzybski has documented with a wealth of illustrative detail. Burrow maintains that our knowledge of the world is weighed down by pathetic fallacies and by the assumption that the self is a center psychically detached and independent. Our systems are self-made, not organismically arrived at; our absolute is personal and arbitrary. Our very observations are often superficial and biased. *Only by avoiding conceptual constructions can we adequately apprehend reality.* As he says:

> . . . our world of 'actuality' is not more real than the world of phantasy, our day not less self-reflective and unconscious than our night, our waking not less apparitional than our sleep. For both alike are motivated by the arbitrary reflection that is the inverted reflection of the will-to-self.[2]

Consciousness is essentially a species of self-consciousness. Our presumably objective judgments rest upon a process of subjective misconception. On these grounds our entire civilization is neurotic, that is, unconscious. The neuroses are sociological in character. Much of what Burrow has to say in this volume, however provocative and iconoclastic, is speculative, full of empirically unsubstantiated statements. What, for example, is the societal consciousness of man? What is meant by saying that individuals are but 'corpuscles in a homogeneous, societal tissue'? Was there ever a coordinated one-mindedness of primordial man, a racial solidarity of man's consciousness?

In *The Biology of Human Conflict* (1937), Burrow again agitated for the supersession of the superficial, cerebrated, symbolic form of existence and the establishment of an organic, body-and-mind form of living. His conclusions were supposed to be based on laboratory experimentation of an unusual sort; the laboratory was not isolated from the social world nor did it confine itself to the individual patient; it included a group and relied on group analysis, in which the analyst was himself included. Burrow wanted subjective man to learn to appreciate objectively his own subjective reactions. The pages of this book are full of valuable observations and challenging ideas. For example, he plunges boldly into the field of semantics, indicating how impracticable is the established practice of knowing and discussing things in terms of their names. We are at the mercy of abstractions with a high affective content. Names like 'money,' 'Communism,' 'democracy,' 'Jews,' 'freedom,' and 'success' are the counters we employ in attempting to understand the world of actuality, but these symbolic abstractions have become obsessions, vague in meaning but absolute in authority. Allowed to atrophy from want of use, the biological process is superseded by a dissociative process, and man loses contact with his environment.

BASIC TO PHYLOANALYSIS as to general semantics is the belief that the fundamental motivations of human behavior can be scientifically investigated. Unfortunately we regard our social environment and its moral, legal, political,

[2] Burrow, *The Social Basis of Consciousness* (New York: Harcourt, Brace, 1927), 90.

and cultural superstructure as unquestionably right. Instead of reacting spontaneously to the world we live in, we respond to it in terms of abstract verbal theories with a high coefficient of affectivity. Though man has succeeded through the instrumentalities of science and technology in controlling his environment, his own subjective processes are left to guesswork, tradition, superstition, and folklore. We know a great deal about the external world, but little about ourselves. It is curious that Burrow, though he wishes to discard the accepted meanings on which community behavior is founded, at no time relies on the analytic tools general semantics has provided for understanding how the symbol and different levels of abstraction function in language and life. In the laboratory community he founded for the purpose of group-analysis, he sought to create 'an environment of sanity or of whole and healthy processes of feeling and thinking that should transcend the level of adaptation now naively accepted everywhere as fitting, desirable or normal.' [3] It is unfortunate that we are not given the precise techniques and methods whereby this transcendence was achieved. All we learn is that the laboratory community rejected the prevailing standard of normality and tried to formulate instead a definition of sanity that would rise above the basic presumptions of society at large. The members of this sanity-centered community were required to purge themselves of conventional habits of speech, thought, feeling, and manners everywhere prevalent, since it is not so much our thinking that requires overhauling as our instrument of thinking, our subjective apparatus. His work, Burrow asserts, cannot be properly criticized by a mentally detached observer. Instead he wants a reader who, like the members of his group, is ready to pass through a process of emphatic, physiological adjustment. That is 'the laboratory technique' required.

Reticent as he is in his account of what is involved in the work of his laboratory community, there is no reticence in Burrow's conclusions. What ordinary communities call 'normal' is simply an unconscious acceptance of a collective neurosis. Life in civilized society has lost its capacity for expressing naturally the intrinsic behavior of the organism. Man has been trapped by his symbols, which are not adequate to mediate between his feelings and their functions. All this has brought about a physiological dysfunction, a split in the personality. Since behavior affects the total organism, and not the mind alone, it cannot be mediated through cerebral symbols. What he would do is to strip aside encrusted ideas and habitual attitudes and return to the immediate feeling-content that produces them—away from the cerebral centers, back to the primordial fountains of feeling, to enable the organism to function as a whole.

In his last book, *The Neurosis of Man,* Burrow gave a comprehensive report on phyloanalysis. He had long ago rejected the notion of curing individuals to help them adjust to their environment, for the environment itself is pathic.

[3] Trigant Burrow, *The Biology of Human Conflict* (New York: Macmillan, 1937), xxxviii.

His task was to cure the world. That was the purpose which animated the founders and workers at the Lifwynn Foundation at Westport, Connecticut. Every member of this group agreed to cooperate wholeheartedly in this coordinated effort at social analysis. No one was to cling to systematized beliefs, assumptions, 'truths,' or 'norms.' Research was to be intensive and unbiased; the behavior of man as a biological whole was to be the quarry. What Burrow wanted to establish was a science of *feeling*, and he was convinced that the task, though extremely difficult, could be accomplished. He felt that it was the snarled internal condition of man which created the dangerous crisis for civilization. Man had to learn to confront his own feelings and motivations, the feelings and motivations of the race as a whole.

IN THIS LAST BOOK, as in the earlier, despite explicit denials, the leading formulations are in agreement with those of general semantics. Burrow emphasizes the fundamental importance of speech and symbolism and the extent to which communication is influenced by current expressions, frozen stereotypes, rumor, hearsay. The trouble with our machinery of communication is that it operates on a purely verbal level and achieves only a pseudo-articulation. Burrow, like Korzybski before him, would try to achieve a deeper level of understanding and communication. 'We shall be interested not so much in man's acquired forms of verbal thought and interchange as in an internal communication among people based upon the continuity that primarily knits them into a common and unitary race or species' (p. 3).

This is the leitmotif of the book, but Burrow at no time makes clear the nature of this phylic continuity and how it knits people into a unitary species. He merely declares that we must restore a mode of behavior founded on biological patterns of reaction that are intrinsic to man, though he fails to explain what these patterns and reactions are or how they can be studied objectively. The only clue he offers is a negative one. Personal opinions and beliefs must be discarded; the only data available are furnished by means of introspection.

All this can be scientifically investigated and ways can be devised (we are not told how) of systematically eliminating subjective biases that deflect man's judgment. Like Korzybski, though without Korzybski's patient devotion to method, Burrow recognizes a basic disharmony between man's approach to objectively demonstrable and observable phenomena and processes, and his approach to the universe of his own reactions. The goal, then, is to develop a reliable scientific method in the study of human behavior, instead of being left at the mercy of guesswork, religious preachment, intuition, moral absolutes, and mystical skulduggery.

Indispensable as words are, language has today become a hindrance rather than a help to communication, a barrier to harmonious cooperation and understanding. Victims of traditional beliefs, popular slogans, and wrong education,

people adapt their behavior to what others expect of them. Hence, incapable of acting or thinking spontaneously, they suffer from countless frustrations and inhibitions. And these frustrations and inhibitions have a close resemblance to the symptoms observable in the neurotic. That is the conclusion at which Burrow arrives: the neurosis of man today is tied up with his social conditioning; subjectively man is moulded by influences which are part of the traditional heritage of his culture. The scientist, the sociologist, even the psychiatrist, are not exempt from these distorting pressures, since all operate within the same psychosocial pathological field. Burrow declares:

> It is hoped that these pages will make clear that our many distortions in human behaviour are traceable to this habitual employment of the symbol to serve purely emotional outlets wholly irrelevant to the actual situation. The observation of this misuse of the symbol socially was the specific occasion of my withdrawal from the practice of psychiatry, as ordinarily understood, and of my effort to establish in the community no less than in the patient an objective attitude towards unclear, misdirected feelings and reactions (p. 16).

It is these unconscious, subjective feelings which distort the symbols of communication and create international as well as interpersonal areas of misunderstanding, tension, and conflict. Each one, if he is to comprehend what phyloanalysis is doing and trying to achieve, must proceed to analyze not only himself but also the community of which he is a part, casting off authoritative opinions and cherished beliefs, re-examining his basic feelings and attitudes. We must strive to restore the lost instinctive balance; we must become members of one another, merged in a primal, phylic unity, a community of purpose and work and living.

Burrow makes it diagnostically clear that our social life today is shot through with neurotic elements. Candidly studying their own behavior as a group, the members of the Lifwynn Foundation made a number of enlightening discoveries. First, normative standards by which men judge each other, far from being consistent, are variable and arbitrary and relative, changing swiftly and often unpredictably. Painstaking research revealed that beneath the facade of polite, artificial behavior with all its inconsistencies there was 'a monstrous *social mood* of systematized prejudice and absolutism' (p. 52). This sinister disease is spread throughout the race of man. All our social relations are determined, unfortunately, not by organismic reactions but by such arbitrary moral standards.

Further on Burrow makes partly clear what sort of cure phyloanalysis tries to effect:

> The special distinction of phyloanalysis consists in the fact that verbal interchange *per se* has no part in it, that these symbolic expressions are epiphenomena that are implicitly discredited from the viewpoint of the organism's basic motivation. The sole aim of the phyloanalytic technique is to demarcate between habit-reactions that are ditentive or falsely moti-

> vated, and habit-reactions that are biologically integrated and organismic. Our inquiries into behaviour have to do with internal physiological processes affecting the organism of man as a species (p. 95).

HERE, THEN, is an attempt to transcend the purely mental interpretation of behavior and to concentrate on the reactions of man as part of an organismic, phylic group. The underlying assumption is that in the organism of man there is to be found a primary motivation that is cohesive, based on cooperation. Burrow develops a number of analytic insights—in his chapter on 'The Anatomy of Prejudices,' for example—which are thoroughly in accord with the teaching of general semantics. He portrays how man as a species has become enslaved by a social system of symbolic stimuli. This process has gone so far that there is evidence of physiological behavior being modified by it. At this point Burrow could have made a tremendously valuable contribution if he had given us the evidence in detail, as well as a precise description of the experiments he conducted. All he tells us is that man, as the result of generations of training, not only responds to certain selected words or symbols, 'but the conditioned reflexes thus induced by these systems of stimuli have become *socially consolidated into affectively conditioned systems of reaction*' (p. 136). Moreover, there is little that is new in being told that there is a distinct parallel between the way an animal in a laboratory is conditioned and the way in which man is conditioned by environmental stimuli, or that conflicting systems of response induce confusion in the motivations and activities of man. 'Like the bell or the card presented to the experimental animal, these words or symbols presented to man call forth in him the physiological reactions originally appropriate only to the actual objects themselves' (p. 139). These reactions to verbal symbols, though definitely physiological, are neither spontaneous nor organic; they involve the substitution of secondary affect for primary feeling. The solution is to work for the regeneration of man as an organismic community.

This symbolic distortion induces a functional dislocation, and the organism's total reaction is thrown out of gear. Man reacts not to the stimulus as such but to the affective increments associated with the sign. We respond, in brief, to a system of substitutive stimuli that are peculiar to the neurotic. *Despite all this, Burrow wants it understood that phylobiology is not to be confused with general semantics.* Phylobiology is not interested in the way individuals are verbally conditioned. 'The interest of phylobiology lies in the social influence of the process of verbal conditioning as transmitted from organism to organism, and in the *physiological* effect of this phylic conditioning upon human reactions from generation to generation' (p. 145). This seems to be a case of hedging. Then, as if to leave no room for doubt, he declares emphatically:

> The method of phylobiology does not make contact with the school of the semanticists at any point—nor, so far as I know, with any other school.

> After all, where we are dealing with behaviour, it is primarily the method, and only the method, that is decisive in any school. It is not what it *thinks,* but what it *does* that defines a school of behaviour (p. 146).

Precisely, and if we examine what phylobiology does, its method of operation, it should be obvious to any objective observer familiar with general semantics that Burrow's work is greatly indebted to, or at least closely resembles, the formulated method of general semantics. The indebtedness comes out most transparently when he is most vigorously engaged in denying it.

> I have yet to see a psychiatrist, a semanticist, a representative of any school or system of behaviour subsisting within the framework of 'normality' whose principle rests upon the thesis that the identity, the central constant, the very substance of the organism's motivation is decentered and its behaviour dissociated in all its interrelational processes, and who has devised a technique consistent with this thesis. . . . In the premises of phylobiology, it is our explicit position that the attempt to cope with neurosis by disparaging the symbols of language or any other item or manifestation is putting the cart before the horse. From the outset we have insisted upon the essentially veridical character of man's verbal forms of interchange within the social setting in which they are employed. It is not the distorted meaning or symbol that is responsible for the incited affect; it is the incited affect that is responsible for the distorted meaning or symbol. Primarily it is the dislocation in the organism's motivation as a whole that is responsible for conflict and ineptness in the organism's interrelational reactions generally.
>
> Far from concerning ourselves with the symbol or with this or that affect with which this or that symbol of language has become burdened, our attack has centred solely upon man's affective (autopathic) identity. . . . Our procedure has nothing to do with improved 'cortical control.' It has to do with the inadvertent substitution in man of a basis of identity that is false because a process of social conditioning has replaced the organism's primary principle of identity throughout the processes of man as a phylum. . . . We have regarded the verbal frames on which the community's behaviour-distortions are hung as relatively quite innocuous epiphenomena, and have consistently emphasized the biophysiological basis of behaviour-disturbances. In our finding, it is not the letter but the spirit of the word that betrays the underlying pathology of its meaning—a spirit co-extensive with the decentring or dissociation in man of the organism's central constant of motivation (pp. 146-147).

THERE CAN BE no question but that in this summing up of general semantics, Burrow is manifestly unfair to Korzybski, who never accepted the dominant framework of 'normality.' In fact, the essence of the method Korzybski worked out was to discover techniques for achieving a sanity beyond the accepted definitions of sanity. It is also strange to find general semantics accused of operating solely upon an 'ideational' basis. Korzybski's aim was not intellectual understanding but a semantic *reorientation* that would affect the organism-as-a-whole and profoundly transform behavior. It was not only our conceptual and linguistic

apparatus that was to be revolutionized but also our dynamics of behavior in all its complex ramifications. Korzybski wished to overthrow the law of identity and to make us feel at home in the actual world of four-dimensional processes. Our semantic reactions were to be trained so that they would not be perverted by laws of identity that are false to fact. Korzybski demonstrated to what an appalling extent semantic perversions underlay not only the conditioning of the child's mind but also the mythologies and social philosophies, the morality and ideals we regard as sacrosanct and true. Korzybski was eager to root out delusional factors, unconscious assumptions, which disturb our orientation to life. He showed, too, how 'intellectual' and 'emotional' elements are inextricably entwined. He insisted that we must do more than study events that are outside of us; we must also examine what takes place within the organism when it tries to translate and interpret these events. The human mind can be made more sane and efficient by the elimination of semantic confusion. The consciousness of abstracting, which Burrow ignores, can save us from a rigid, primitive linguistic compulsion.

Burrow's failure to understand consciousness of abstracting leads inevitably to a reiteration of the familiar charge that general semantics is merely concerned with words. Nevertheless, Burrow is convinced that all disorders arise from disorders of communication: that man, the only irrational animal, forms pictures of the world that are distorted by his diseased affects. Hence he insists that the reform of communication must take place 'at a deeper level than the customary affect-reactions involved in mental and verbal forms of interchange. It lies deeper than the mere exchange of ideas and affects through the symbol or language' (p. 291). Since general semanticists say very much the same thing, why does Burrow accuse general semantics of verbal fetichism and socially conditioned conformity while absolving phyloanalysis of guilt? Actually, the same stricture can be applied with equally damaging effects to Burrow's phyloanalysis, for he too must present his critique of the distortions produced by language *in the medium of language*. It is difficult to understand why he felt so strongly that reading a book on general semantics was a 'mere exchange of ideas and affects' while reading a book on phyloanalysis was not. Both disciplines attempt seriously to point beyond the words in which they are framed to non-verbal levels of reorientation, and both appear to result, among serious students at least, in some kind of non-verbal self-training.

BURROW's experimental findings, reported in the latter part of *The Neurosis of Man,* indicate that one breathes more slowly when the organism is in tune with its environment, that there is a reduction in the number of eye-movements, that there is a characteristic alteration in the brain-wave pattern, and that there is a reduction in the degree of neuromuscular tension. All this is either stated or predicted in the literature of general semantics, in which a 'semantic state' is defined as psychosomatic, i.e. neither 'mental' alone nor 'physical' alone,

but *neurosemantic*. Burrow's unsupported indictment of general semantics makes clear that even the phyloanalyst may be guilty of disordered, false-to-fact judgments, and possibly distorted affects based on his reliance on the separative symbols of 'I' and 'thou,' 'my theories' and 'yours.'

The historical development of the concept of allergy carries it from a narrow offshoot of immunology to a basic physiological response of the organism to the world at large. The original concept was within the framework of the newly discovered antigen-antibody mechanism and evolved beyond those limits as scientific medical knowledge accrued. At any particular time the concept of allergy paralleled the scientific development of the day. The broader connotations of allergy in regard to the life process itself are only now being appreciated with the breaking down of the rigid departmentalization of medical knowledge. We are in an era of synthesis and are catching a glimpse of the totality of nature. We are beginning to realize that isolated fact is a semantic allusion and is true only in the mind of man. There is no self-contained or unrelated phenomenon in nature. The phenomena isolated and studied by man are part and parcel of a single, complex, dynamic unity. The artificial boundaries we have erected between physics and chemistry, between the psychological and physical, between the societal and the individual, between living and nonliving matter do not exist except in our minds. Scientific treatises have recently been published relating many of these apparently separate and distinct aspects of nature. Eventually a common denominator will be found. Some work has already been done which indicates that the common denominator is a special kind of energy and that variation in the basic energy pattern arrangement accounts for the apparent specificity of different aspects of nature. The difference between the so-called allergic and non-allergic may be explained on just such a basis. Although at this moment such a definition is not entirely meaningful, still it points a direction and can be broadly conceived. The theory of variation in basic energy pattern is certainly more satisfactory than defining the difference between allergic and non-allergic with such words as 'heredity,' 'altered reactivity,' and 'hypersensitivity.' All of these words are walls behind which we hide and beyond which we cannot see. HARRY SWARTZ, M.D., *Allergy*, Rutgers University Press, 1949.

✯ DISCUSSION ✯

SCIENCE AND VALUES: AN EXCHANGE OF VIEWS BETWEEN LUNDBERG AND RAPOPORT

DEAR PROFESSOR RAPOPORT: Congratulations on your very fine book, *Science and the Goals of Man,* which I have just been reading. Under separate cover, I send you a reprint of a recent article of mine in the *Scientific Monthly* [May, 1950], 'Alleged Obstacles to Social Science,' in which I repeat and develop a point which I have made frequently elsewhere and on which you come to other conclusions on pages 230 and 231.

What I have said in the above article covers so completely the difference between us on this matter that I shall not indulge in a long discussion here. I must continue to insist, however, that the position which you and Dr. Hayakawa have taken on this matter is, in my opinion, an extremely dangerous one. I mean socially dangerous in application, e.g., if the time ever comes when we have democratic science, Communist science, capitalist science, etc., that will be the end of science. Its dangerousness, however, would not be an argument against it if it were logically sound. The position is untenable on both counts.

In fact, I think you concede my point when you say, *'in terms of the values described above* social orders and cultures can be evaluated by the scientist. Those values are not arbitrary.' It is precisely my point that any such evaluations must be *in terms of stipulated values. Any* values may be stipulated, including those that are contrary to the preferences of scientists and which, as you put it, are 'incompatible with the direction inherent in science itself.' Incidentally, the phrase 'the direction inherent in science itself' is a highly dubious one. It implies that there are inherent in science and in the products of science labels as to what scientific findings should be used for. It is an attractive notion that there is in science some inherent quality that dictates its laudable use, and I once cherished the idea. I have been compelled to abandon it because I see it contradicted by the facts on every hand. Preferences in culture, economic, political, and otherwise will vary among scientists as among other people. Each will try to make out that science somehow 'inherently' supports the system he advocates.

I think the failure to distinguish between the scientist as scientist and the scientist as citizen is at the root of this disagreement. This is strikingly evident in your middle paragraph on page 231. I agree completely with your paragraph if you allow me to insert two brief parentheses as follows: 'There are some things

in which the scientist [*qua* scientist] cannot be impartial, i.e. he must be partial to the *methods of science* . . . similarly, he [*qua* citizen] cannot be impartial in his judgments about forms of social organization, etc.' The importance of this distinction cannot be overemphasized. We recognize it as absolutely necessary for objective procedure in other professions. It frequently happens that a judge temporarily steps out of his role as judge and bitterly denounces a criminal, and tells him what sentence he should like to inflict upon him. In doing so, he makes it clear that he is speaking as a citizen. Resuming his role as judge, he may discharge the criminal simply because there is no law against his form of misconduct. To let his feelings as a citizen take precedence over recognized legal procedure [scientific method] is recognized by everyone as being more dangerous than to let the culprit go free.

But I have argued all this in the paper I am sending you and in many other places. Also, it is a minor point in your otherwise very valuable book. My congratulations on the work as a whole.

Cordially yours,

GEORGE A. LUNDBERG

DEAR PROFESSOR LUNDBERG: Perhaps we can reach agreement (at least achieve more agreement) if I make clearer my use of the expression 'direction inherent in science itself.'

You seem to interpret the phrase as implying that there are inherent in the method of science judgments as to what the products of science should be used for. Taken at face value, this interpretation makes the notion of 'inherent direction' untenable. Indeed, one cannot derive from all the theories of atomic structure a single precept concerning the use to which atomic energy should be put. Indeed, one cannot derive the proposition 'Wars are evil' by syllogisms unless one postulates other value-judgments and then shows how prosecution of wars lead to the violation of those values.

What I meant by the 'direction inherent in science' is simply the observed phenomenon that science is a self-catalytic activity: the more science is pursued and cherished, the greater is the further increase of scientific knowledge. I propose as an ethical principle the simple affirmation (in the sense of approving acceptance) of this fact. I am then faced with the problem of justifying this principle. Again, of course, one may point out that one can justify something only in terms of something else, and we are back where we started. If I may lay aside the difficulty for a moment, I would like to examine somewhat more closely the consequences of accepting as an ethical principle the self-propagating activity of science.

A number of questions immediately arise. First, can one develop a full-fledged ethical system on the basis of this principle alone? I think so. If whatever increases the scope of total human knowledge and has moreover potentialities of

increasing it still further is termed as 'good' and the contrary is termed 'bad,' we are given a general orientation for value-judgments. In principle, the amount of knowledge and its rate of increase are measurable or at least estimable. This is not too reliable a yardstick of 'good' but somewhat better than those in current use.

Second, what kind of an ethical system does this principle imply? I think it can be shown that such an ethical system would include the greater part of other ethical systems based on the so-called 'Golden Rule,' previously justified in terms of revealed non-human authority or in terms of metaphysical considerations (Taoism, Buddhism, Christianity, etc.). In an ethical system based on simply the affirmation of self-propagating cognition, the 'Love thy neighbor' principle would be simply a concise expression of the psychological condition most favorable to the unhampered pursuit of knowledge. It appears, therefore, that scientific ethics must be as concerned with 'human values' as it is with laboratory equipment and with semantics. There is not much weight in the argument that scientific progress is not correlated with improved human relations and that the most advanced nations have gone berserk. A scientific ethics is by definition concerned with the *total* increase of human knowledge, not with the work of this or that specialist. As you yourself say, the remedy for the seeming evils of science is *more science,* especially social science, whereas we are ruled by newspaper columnists and advertisers and diplomats. The insanity of scientifically advanced nations has been specifically in the *denial* of science and of freedom of inquiry.

Third, would such an ethical system be acceptable to many? This question, I think, is the crux of our apparent disagreement. Your big point is the danger of 'imposing' an ethical system on people unwilling to accept it. However, you must admit that you too are proposing an ethical system, which may be summarized thus: *Let people choose their modes of behavior according to their culturally conditioned preferences, but let science make available to them the consequences of their choice.* It must be pointed out that coercion is not excluded from this ethical principle. You say, for example, in your article 'Applying the Scientific Method to Social Phenomena':

> But it is wholly absurd to contemplate a social order in which there are no restrictions on the activities of minorities, and indeed on all other subgroups of a society. For the same reason, all the loose talk about abolishing discrimination is entirely fatuous. The basic structure of society consists of a complicated system of discriminatory behavior on the part of all individuals. The most that can or should be done about this by the community is to objectify, formalize, codify, and institutionalize, as far as possible, whatever rules governing discrimination a community decides to support.

Hence you recognize that the imposition of behavior patterns is a necessary consequence of group living. But you delegate the final authority (and responsi-

bility) for this imposition to the 'community.' Now I ask how big is this autonomous community? Is it a family? A neighborhood? A city? A state?

It can be reasonably argued that Jackson, Mississippi, has more or less completely formalized, codified, and institutionalized its discriminatory treatment of Negroes. Is this what you mean when you say that this is the 'most that can or should be done about discriminatory behavior by the community'? You do say that the 'costs and consequences' of such behavior should be made known to the community. But suppose the community decides that the status of the Negro is a closed issue? Your program is self-defeating if it implies the complete autonomy of 'communities' even to the extent of excluding information about costs and consequences.

HOWEVER, I don't think your system actually implies that. I think you conceded that communities and cultures should not be *entirely* autonomous, because, as you say, their autonomy should be based on choices *with knowledge of consequences*. But this means that there should be some way of making information available to them, and this in turn means that they should not be free to suppress information.

Now the point I wish to make and should have made more clearly in *Science and the Goals of Man* is this. Many of the incompatible cultural differences rest on suppression of information. Suppression can be explicit (as in the U.S.S.R.) or implicit (as in the U.S.). Implicit suppression of information consists of simply commanding the greatest part of the communicative network of a culture. If, as has been recently estimated, with the advent of television the average reading time of adolescents has been reduced to seven minutes a day with the further qualification that 85 per cent of the teen-age folk read exclusively comic books, it can be said that the youth of this country are deprived of a vast amount of information. The fact that the aspirations of so many people in the U.S. are expressed so frequently in competitive terms and so rarely in cooperative terms can be ascribed to the characteristics of the U.S. culture, but these characteristics rest on implicit suppression of information (in that virtually all the channels of mass communication picture life in competitive terms). The same is true, of course, of many different cultures. The Russian may be convinced that it is immoral to question the major policies of his government; the Indian that it is immoral to eat meat; the American that it is immoral for a Negro to love a white woman, etc., all cultural 'preferences' if you will, but all dependent on the suppression of information.

I don't think you will quarrel with this conjecture. You say, in effect, 'Let information be free, and *then* if there are residual cultural differences, let us respect them.' I heartily agree with this program. All I say is that the *enforcement of the freedom of information already involves a disregard for some cultural peculiarities and the violation of some taboos.*

For example, we wish to make information available to the inhabitants of Mississippi. Immediately the question arises: all the inhabitants or only a few? If the information is made available to only a few, namely, those who are relatively free to receive it without violating Mississippi mores, what reason have we to suppose that the costs and consequences will make much impression on them, since the immediate costs of discrimination are not paid by them? If we say that information be made available to all, we are already violating what seem to be 'cultural preferences' in Mississippi.

If I seem to advocate the imposition of one ethics on all cultures, it is because I recognize that in order to advocate the 'availability of information about costs and consequences' as you do, it is necessary to advocate the values implicit in the scientific method, as I do. This involves not so much a replacement of the present cultures by a single culture as a superposition on the present cultures of a culture of a different order—a culture-studying culture. What I particularly stress is that this culture is less coercive than the existing ones and that its internalization would tend to reduce the coercive and self-defeating features of existing cultures and at the same time would tend to preserve rather than destroy the creative aspects of the diverse cultures which are free from self-contradiction and from incompatibility with each other.

I DON'T THINK we disagree in principle. Our apparent disagreement is in emphasis. You emphasize tolerance of diversity. I emphasize those aspects of culture which must be brought under a common denominator, particularly a regard for the voice of the scientist. There are, of course, dangers even in 'tolerance.' You cite as an example of cultural intolerance the difference in attitudes on the part of Germans and Russians to the extermination of the Jews and the kulaks. There are two ways to resolve this intolerance. One way is through 'mutual tolerance.' The 'tolerant' Communist might say to the Nazi, I now see that your destruction of the Jews was really no worse than our destruction of the kulaks. You are not such a bad fellow after all. I am glad we understand each other.' The Nazi in an upsurge of reciprocal tolerance could then return the compliment. I am sure that is not the tolerance you mean. You would rather have both the Germans and the Russians recognize that it was wrong to destroy so many people. And it is sufficient to apply the scientific method, as you propose, to the question whether the activity of a group does in effect constitute a threat to an existing regime. It can be argued that the activity of the protestants did in fact threaten the existence of regimes based on Catholic hegemony; that the activity of cooperatives does in fact threaten regimes based on the power of cartels, that the activity of the NAACP does to some extent threaten systems based on white supremacy, and that your activity and mine does threaten the unencumbered influence of a Fulton Lewis, Jr.

The reason it was wrong to destroy the Jews and the kulaks is not because

they might have been innocent of what they were charged with, but for an entirely different reason, namely, that violence is incompatible with an atmosphere of mutual trust which is essential for effective pursuit of knowledge.

NOW I COME to your point about the scientist *qua* scientist and the scientist *qua* citizen. If I understand you correctly you wish to keep these orientations separate, because you are afraid that the orientation of the 'citizen' may corrupt the impartial orientation of the 'scientist.' I also deplore the emergence of the notions of 'Capitalist science' and 'Communist science.' But I attribute this absurdity precisely to the dichotomy in the minds of scientists between cultural loyalty and scientific orientation. Science is being split because of the existence of incompatible ethics. Hence in my opinion it is incompatible ethics which must not be tolerated, and the only way I see to unify ethical orientation without imposing my ethics on thine is to fuse science and ethics. Science is still one in spite of the attempts of sick, perverted people to split it. There is hope that a unified world may yet crystalize around it.

I think it is dangerous to tolerate incompatible ethics, because the contradictions in orientation make conflicts inevitable. If a diversity of ethical systems does *not* necessarily make conflicts inevitable, that must be only because some insight makes mutual tolerance possible. But then *that insight* should be made the basis of a higher ethics, a supra-cultural ethics, if you will. That is what I meant by the ethics inherent in science.

Sincerely yours,

ANATOL RAPOPORT

DEAR PROFESSOR RAPOPORT: It was good of you to write at such length. Your second paragraph disposes, to my complete satisfaction, of the whole point at issue, and I shall therefore remark only briefly on many of the other interesting matters with which you deal in the rest of your letter. You are entirely right that I understood your expression 'direction inherent in science itself' precisely as you say at the beginning of your second paragraph, namely, that there are inherent in the method of science judgments as to what the products of science should be used for. The rest of your paragraph expresses so precisely my central contention that I have nothing to add. I am, of course, greatly pleased to know that we agree on this.

I have no objection whatever to your proposing 'as an ethical principle the simple affirmation (in the sense of approving acceptance)' of the proposition that 'the more science is pursued and cherished, the greater is the further increase of scientific knowledge.' I would gladly join you in *taking* that as an ethical principle and, if so, I think we are both agreed that the principle is *taken* and is not a scientific conclusion in the sense of being arrived at by the generally accredited methods of science.

In connection with your further remarks, I would enter one small observation, although it is not important from the standpoint of the main argument which has been disposed of above. In one paragraph you use the phrase scientific ethics, which I think is highly ambiguous and responsible for much confusion. It can be taken to mean (1) the ethics of scientific work, e.g., clean your test tubes, etc., and (2) will A or B, as possible programs, increase longevity (if that has been taken as a goal or as an ethical good). There is general agreement as to what are the ethics of scientific work. There can also be, I think, equally definite agreement about social programs provided the taken criterion for evaluation has been specified.

Regarding the acceptability of the ethical system you propose, I certainly would not consider this the crux of our apparent disagreement. My reluctance to impose an ethical system on people unwilling to accept it is purely the result of my democratic bias, which I have always admitted but, unfortunately, have also been compelled to admit that it is merely a bias whereas many of my friends would like to have me contend that the superiority of democracy is a scientifically demonstrated and demonstrable conclusion. Given certain criteria, it doubtless is demonstrable. By certain other criteria it certainly is not. I cheerfully admit your accusation that I am here proposing an ethical system and have not the slightest apology for doing so. I merely insist that I do not arrive at that proposal by scientific methods. You are quite right again when you point out that coercion is not excluded from the ethical proposal I make. But any coercion that may be implicit in the ethical proposal has no more to do with science than the proposal itself, namely, nothing. The paragraph you correctly quote from my paper, especially the part where I speak of what 'should' be done, is obviously my prescription as a social worker or as a citizen and not a scientific conclusion at all.

I completely share your views and your indignation on the situation of the Negro in Mississippi and elsewhere, and as a citizen I will join you in any program you propose that has a reasonable chance of alleviating these conditions. When I say that the community must decide what do do about these things, again I merely betray my democratic bias as contrasted, for example, with setting up the Sociological Society as dictators in matters of this kind. Incidentally, the word community here can mean the national community rather than smaller subdivisions. A most excellent article on this subject has recently appeared in the *Journal of Psychology* by Percy Black and Ruth D. Atkins ('Conformity vs. Prejudice,' *Journal of Psychology,* Vol. XXX, 1950, pp. 109-121).

FINALLY, I must agree emphatically with you when you say, 'it is not sufficient to apply the scientific method . . . to the question whether the activity of a group does, in effect, constitute a threat to an existing regime.' I not only agree with you but go further and contend that the application of scientific method can yield nothing at all but *statements*—of the 'if . . . then' type. Any kind of

social action, social work, social engineering, or political reform must not be confused with scientific method, however valuable the 'if . . . then' statements may be in this social work. To come to the conclusion that a certain drug will kill a man under certain circumstances is a scientific conclusion; to decide to take that drug or feed it to someone else has nothing whatever to do with science but is likely to have much to do with ethics. Likewise, all that science can say is 'if you want maximum pursuit of knowledge, don't fight'; that is, accepting your taken ethical principle as laid down at the outset.

I share with you very definitely the hope, which I have frequently expressed, that a unified world may yet crystallize around science. Science, it seems to me, possesses certain characteristics that might in time gain the adherence of all men to a common method as it has already gained the adherence of that small number of people who are today the scientists of the world. It is a hope which sustains me in my work, but it is not a scientific conclusion at all.

I have greatly enjoyed this correspondence and feel that a number of points have been cleared up.

Very cordially yours,

GEORGE A. LUNDBERG

. . . a very large number of people cease when quite young to add anything to a limited stock of judgments. After a certain age, say 25, they consider that their education is finished.

It is perhaps natural that having passed through that painful and boring process, called expressly, education, they should suppose it over, and that they are equipped for life to label every event as it occurs and drop it into its given pigeonhole. But one who has a label ready for everything does not bother to observe any more, even such ordinary happenings as he observed for himself, with attention, before he went to school. He merely acts and reacts.

For people who have stopped noticing, the only possible new or renewed experience, and, therefore, new knowledge, is from a work of art. Because that is the only kind of experience which they are prepared to receive on its own terms, they will come out from their shells and expose themselves to music, to a play, to a book, because it is the accepted method of enjoying such things. True, even to plays and books they may bring artistic prejudices which prevent them from seeing *that* play or comprehending *that* book. Their artistic sensibilities may be as crusted over as their minds.

But it is part of an artist's job to break crusts. JOYCE CARY, 'On the Function of the Novelist,' *New York Times Book Review*, October 30, 1949.

✡ BOOK REVIEWS ✡

The Great Social Neurosis

THE NEUROSIS OF MAN: AN INTRODUCTION TO A SCIENCE OF HUMAN BEHAVIOR, by Trigant Burrow, M.D. New York: Harcourt, Brace and Company, 1949. 428 pp. $7.50

THE BASIS of survival, animal or human, says Dr. Burrow, is *total* attention. 'Attention,' he says, 'is all but synonymous with the relation of an organism to its environment.' And again:

> [The senses] constitute the media of contact with the external world. Undifferentiated or whole attention, as it exists in the animal, and primarily of course in man, is essential to viability and survival. Through the organism's instinctual attention it secures food . . . senses danger, seeks its mate; and in all its external relations the health and integrity of the organism is dependent upon the process of attention.

This organism-as-a-whole attentiveness to nonverbal reality is operative in science, and this is the reason science is effective. Science is words, but the scientist's orientation is towards the reality underlying the words, because his discipline requires the constant checking of his language against experiment and experience. 'The data obtained through . . . a system of [scientific] symbols express man's neural reaction to the objects and processes for which these symbols stand.' Consequently, in science, man achieves a 'consistent relation to the outer world' through 'the agreement of his own sequence of sense-reactions with the sequence of reactions existing outside him.'

> Only man's neural conformity to the observable consistency of external phenomena has made possible the intelligent consistency of his own behavior in respect to the outer world. . . . This consistency gives authenticity to the symbol.

When symbols have this 'authenticity,' well and good. But where, outside of science, do they have it? In our social relationships, in economic and national strife, in racial and religious and class disputes, and in our personal lives, almost the entire human race reacts wildly to symbols that are fictitious or imperfectly rooted in reality. Man, somewhere in the course of his history, became over-enamored of the usefulness and power of his words and symbols. Reactions to symbols, reactions to qualities and attributes projected upon the symbol, came to supplant man's direct, subverbal relation to his environment, the relation arising from total attention. In place of total attention, there arose a divided, 'partitive' reaction:

> As more and more men took over the signs and spoken word in substitution for the reaction of his organism as a whole, as more and more he adopted a secondary, mental plane in place of his primary, organismic plane of behavior, the extraneous and deviate factor of affect began to enter in, and man inadvertently lost touch with the hard and fast impact of outer actuality . . . the symbolic function came to dominate man's processes.

THE ABSTRACTION or 'image' most deeply imbued with affect which results in man's being divided *both from himself and others* is his abstraction of himself: that to which we refer when we speak of 'I' and 'me.' With the setting up of the 'I'-image, there arises a fallacy of the self as distinct and separate from other selves: in short, self-consciousness. There arises, too, the lifelong tension of me-*versus*-you — the lifelong necessity of saving face, of protecting the sense of one's uniqueness. And from this arises the great reversal of the natural flow, from within outwards, of consciousness. Instead of living in terms of his deepest awareness, man lives in terms of his social image reflected back to him by the opinions and evaluations of others; he lives from the outside inwards. He lives by creed, by dogma, by obeisance to manipulated symbols, in fear of or in revolt against father-images.

This is the great social neurosis of which we are all victims. The psychiatrist and his patient, the judge and the prisoner before him, the reformer and the defenders of institutions to be reformed — all are equally victims of the same neurosis. In the vast and universal dysfunction of our symbolic processes, we are all alienated from our own deepest awareness, and therefore from each other. We are all clawing about in a Nessus' shirt of our own making, and 'Until man has taken upon himself the task of developing a science of his own feelings, his conflicts and wars are inescapable.'

SUCH, in inadequate summary, are some of Dr. Burrow's conclusions. They are corroborated by the profound insights of such a poet as D. H. Lawrence, whose much-misunderstood distinction between 'mind-knowledge' and 'blood-knowledge' is almost identical with Dr. Burrow's distinction between 'autopathic or partitive' reactions and 'orthopathic' or 'total' feeling. They are corroborated, too, by the general semantics of Alfred Korzybski, Dr. Burrow's belief to the contrary notwithstanding. Dr. Burrow's 'total attention' seems to me almost exactly equivalent to Korzybski's 'extensionality'; his statement that science enables man to achieve a 'consistent relation to the outer world' through 'the agreement of his own sequence of his sense-reactions with the sequence of reactions existing outside of him' also appears to me equivalent to Korzybski's insistence that, in order to achieve and maintain 'sanity,' one's language and symbolizings must lead to "predictability.' The 'predictability' is to be found, according to Korzybski, when the 'order' ('sequence') given in one's internal 'maps' (ideas, theories, symbols, images) corresponds to the 'order' existing

in the 'territories' (actuality); but this authentic relationship between 'map' and 'territory,' between symbol and reality, is rarely found outside of science. Burrow and Korzybski agree that in the area of social relationships, 'morality,' politics, ideologies, economics, and so on, practically the whole world is ill, since we all live by dogma, by creed, by ideology, and by affect-laden symbol, instead of by a direct relationship to the environment. Whether we call this symbolic dysfunction 'aristotelianism' (with Korzybski) or 'partitive, autopathic response' (with Burrow) doesn't seem to me to matter much, since both expressions need a great deal of explaining before the facts they point to become apparent.

THERE IS a similarity, too, in the therapies proposed by Burrow and Korzybski. In the former, it is 'Phyloanalysis,' a method of group work enabling people to get beyond the socially conditioned reactions to each other in terms of status, 'face,' and other symbolic considerations, to a deeper awareness of one's own feelings and therefore a deeper relatedness to others. In Korzybski, the therapy is training in awareness of the 'silent (nonverbal, nonsymbolic) level.' Procedures may be different, but the aims are startlingly alike.

As one who owes a deep debt of gratitude to the writings of both Burrow and Korzybski (as well as of D. H. Lawrence), I cannot help wishing that the students of the two would get together, toward the mutual enrichment of both.

S. I. HAYAKAWA

Comment by Trigant Burrow

THE FOREGOING review of *The Neurosis of Man,* by the late Trigant Burrow, originally appeared in *The Tiger's Eye,* Vol. I, No. 9 (October 1949), and is reprinted here by permission. A copy of it was sent to Dr. Burrow, along with other materials on general semantics. The following letter was received from him shortly thereafter:

LETTER FROM TRIGANT BURROW TO S. I. HAYAKAWA

Westport, Connecticut
November 16, 1949

DEAR DR. HAYAKAWA: Thank you for sending me the copy of *ETC.* for the summer of 1948 containing your article on the aristotelian structure of language in which you make reference to me. On reading the quotation from me given in the footnote to your article, I was quite taken aback by the meaning it seemed to convey, and immediately turned to the original passage in *The*

Biology of Human Conflict. In so doing, I found that you had omitted the first part of the sentence (the part before the dash), and quoted the second part as though it were complete. In full, the sentence reads: 'It is in his unfamiliarity with the deeper basic factors internal to him that man has failed to come to grips with the actual processes underlying all these spurious abstractions — these mere names that have vicariously become the be-all and the end-all of his existence.' [1]

I know you will not think me unduly meticulous in calling this discrepancy to your attention. It so happens that the omitted portion of the sentence is extremely vital in correctly conveying my position regarding the importance of language in the social dysfunction of man — a point of view which I feel differs fundamentally from that of general semantics. As I have many times stated, I do not think that man's basic difficulty is in the inadequacy of his words to present reality, or in his faulty response to words. Nor does it seem to me that man can come to grips with his conflict and division by achieving piecemeal a more extensional orientation in regard to the myriad words with which we are surrounded, or by a greater knowledge or awareness of the process of abstracting, however valuable and important such disciplines may be. To our research unit these factors, like much else in the symptomatology of man's behavior, appear to stem from the presence in man of an interpersonally systematized affect-identity (the 'I'-persona, in my terminology) which has overtly replaced the actual self as a freely functioning unit in a species continuum.

Not to put the primary emphasis on this phylophysiological dysfunction appears to me to put the cart before the horse. What shall it avail us to recall our affective connotations, our 'intensional' meanings in regard to this word

[1] [EDITOR'S NOTE: Dr. Burrow refers to the fact that the quotation from his book did not, in his opinion, present his thought, since it omitted the part of his sentence here italicized: *'It is in his unfamiliarity with the deeper basic factors internal to him that man has failed to come to grips with the actual processes underlying all these spurious abstractions*—these mere names that have *vicariously* become the be-all and the end-all of his existence.' As Dr. Burrow indicates in his letter, the portion italicized was for him the vitally important part of his statement. Only the remainder of the sentence was quoted, and from this the word 'vicariously' was omitted.

The incomplete portion taken from Dr. Burrow's sentence had been quoted in support of the following statement: 'In further illustration of our cultural tendency toward regarding the knowledge of words as the knowledge of things, we may cite the history of western science, in which the traditional philosophical quest has been to seek to "define" the "essences of things." This tendency continues to show itself in the "natural logic" of unreflective persons who feel that when a thing is *named,* one has discovered all he needs to know about it. An observable tension is exhibited by many people confronted by an unnamed object — a tension that usually disappears when a name has been given. In terms of semantic reactions, such behavior means at all levels a tendency to make one's adjustment not to objects but to names.' Hayakawa, 'What is Meant by Aristotelian Structure of Language,' *ETC.* 5.228 (Summer 1948).]

or that, this concept or another, the ideology of one man in contrast to some one else's, if the whole intent, if the entire motivation of the falsely systematized, societally isolated persona is to produce partiality and prejudice in favor of the 'rights' and 'goodness' of his *self* and *his* affiliates in contrast to the 'rights' and 'goodness' of other selves?

In his letter with which he returned the advance chapters of my book, one scientist comments on the relation between man's symbolic capacity and the neurosis, and says that 'rather tangential to that question is the curious observation of Charles Stockard that man is the only animal that gives deliberately false signals to his own kind — the I-persona at work?' It is my position that it *is* the 'I'-persona at work; that the egocentric, partitive self with its systematization of affects and prejudices is the motive power, the neurodynamic factor in man's behavioral impasse today. Accordingly, I feel that it is this self or 'I'-persona — the subjective identity of each of us — which must be brought to objective observation and awareness if we are to achieve a scientific approach to the problem of human behavior, individual and social. It is toward this major aim that our researches have long been oriented. In the effort to understand the factor of behavioral conflict, our work has made at least an entering wedge through its internal differentiation of the contrasting tensional patterns that are the physiological concomitant of ditention and the 'I'-persona on the one hand, and of cotention and man's phyloörganismic adaptation on the other. Furthermore, this technique has resulted in the establishment of cotention, or the organism's total pattern of behavior, as a practical instrument for reorienting and controlling the organism's behavior in relation to other organisms and to the environment. In order to be effective, of course, cotention must be community-wide. It must become as effective socially in man as his prevalent ditentive adaptation is now.

It does seem to me that the 'I'-persona developed in man coincidently with the emergence of the function of communication through speech. This is a topic to which I am giving especial emphasis in a paper I am preparing at the moment. It may be that my manner of emphasizing the joint origin of language and man's ditentive behavior has been misleading. I fear, too, that I have not always been explicit enough in my writing. If this is true, I concede that it is up to me as a recalcitrant 'I'-persona to eat humble pie — a dietary régime to which I am not a stranger. In reading passages from *The Biology of Human Conflict* (I have especially in mind portions of the Introduction), I can easily see that I may have given an undue emphasis to the function of language in man's bionomic dilemma. Taken out of the context of my thesis in its entirety, a number of passages could be misleading, and the reader might readily conclude that the theme of phylobiology and that of general semantics are largely in agreement.

In the second half of my recent book, the attempt is made to bring this

whole matter into clearer phylobiological focus. I earnestly hope I have succeeded. Some weeks ago on reading the review you wrote for *The Tiger's Eye*, of which you kindly sent me a copy, I thought to myself that surely when you have read *The Neurosis of Man* in its entirety, you cannot fail to recognize that this systematization of affect into a spuriously partitive identity is the essential crux of our thesis. . . .

Thank you again for your earnest and continued interest in the trend of my research. With best regards,

Sincerely yours,

TRIGANT BURROW

Dentists and Attitudes

PSYCHOBIOLOGIC FOUNDATIONS IN DENTISTRY, by Edward J. Ryan. Springfield, Illinois: Charles Thomas, 1946. 131 pp.

THIS IS a small book, not long or hard to read, written by a practicing dentist. It draws from many sources, notably from the psychosomaticists (Flanders Dunbar and others). It outlines a general psychosomatic roach to dental practice—not that every dentist be a psychiatrist, but that ink in psychosomatic terms and . . . integrate this point of view witl other treatment methods' (p. 52), that he take a psychotherapeutic approach of relieving tensions, of reducing undesirable emotional states, of giving dental and medical education, and of planning his procedure.

Dr. Ryan has us consider the dental patient as an organism-as-a-whole-in-an-environment, rejecting as explanation for dental difficulties single causes. In doing this he calls upon the work of the constitutional psychologist William H. Sheldon (*Varieties of Human Physique*, 1940, and *Varieties of Temperament*, 1944). This means considering a dental diseased state not only in the context of a body, but in one of a particular structure, in organisms of differing tolerances and requirements. Sheldon's constitutional approach also points out for the author important differences among patients in sensitivity to pain and in the establishment of dentist-patient relationships.

Ryan considers the organism as a developing process. The orientation of the child toward the dentist and his work is established early, as are the emotional patterns that 'drive' the glands of secretion (salivary, adrenal, etc.), as are also the patterns of diet which may make for autointoxication. Also established is the general pattern of living, which determines the situations into which the organism will be thrown. He ascribes responsibility to parents and to the entire play and growth situation for generally unhealthy patterns of evaluations, including particularly an unhealthy attitude toward dentists.

KENNETH H. BONNELL

Los Angeles, California

✰ CORRESPONDENCE ✰

A 'Letters to Russia' Contest?

SIRS: Viewing the present international crisis as at least in part stemming from a failure to establish communication among populations of different countries, we submit the following plan as an attempt to improve the situation. We make the following assumptions:

1. Close communication breaks down interpersonal prejudices and hostilities.
2. Reorientation in thinking from accepting force and violence to accepting persuasion and examples as techniques in problem solving is essential if war is to be prevented.
3. Change in public opinion creates political pressure for a different approach on the diplomatic level between countries.

We have tried to devise a method to reach a very large number of the American public and involve them in a personal reorientation toward the problem of world peace. If the plan can be carried through to its conclusion it will be possible to establish communication between the peoples of America and Russia with the probable result that tensions would be reduced on an individual level. However, even if the plan goes no farther than the initial stages, an important first step toward peace will have been made in the individual reorientation to persuasion as a method of settlement in international relations.

Rather than suggest an all-out re-education program, probably consisting of bombarding the public with obvious propaganda, we think the method we are suggesting is not only more subtle, and therefore is less likely to arouse antagonism and prejudice, but is fundamentally more psychologically sound, in that it motivates the individual to convince himself in the way uniquely appropriate to him.

We therefore suggest the following plan as one possible method of implementing the basic points given above:

An impartial non-political organization would sponsor a nation-wide 'Letters to Russia' contest, which might be drawn up somewhat along the following lines:

> *Submit* a letter to a Russian family, presumably much like your own on the
>
> *Subject* of the necessity and desirability of living peacefully in one world, and/or the brotherhood of all mankind, and/or the futility of war as a means of solving man's problems, etc.; judged on these
>
> *Rules:* closing entry date, set for maximum participation; arbitrary

length; sincerity; adherence to the announced subject; no age, sex, race, etc. limits; effectiveness in creating good will and allaying tension.

Judges: famous non-partisan personalities, such as possibly Margaret Mead, Albert Einstein, Sir Benegal Rau, etc., who would award the

Prizes: Whatever a contest agency might recommend to achieve maximum public interest and participation.

After the announcement of the winners and the awarding of prizes, the best letters would be printed, and following the elimination of threatening, hostile, and disparaging letters, as many suitable letters as possible would be translated into Russian and sent, with original letter in English, to an individual Russian family. A mailing list might be obtained from Russian government agencies, telephone books, a Who's Who in Russia, or from compilation of private mailing lists. A request for a reply might be added by the translator to every letter sent.

All persons whose letters are sent to Russians might be mailed a short statement of suitable methods of continuing this correspondence if they receive a reply. The sponsoring organization might set up an office where replies could be translated free or for a nominal charge.

We realize that a contest is not as dignified as academic research or a scholarly book, on principles of dealing with our Far Eastern affairs for example. However, it is imperative that we reach large numbers of the American public, stimulate their thinking, and guide their behavior from defensiveness and hostility into a more reasonable approach. Academic books and erudite papers will never reach the majority of people. The contest has proved its ability to interest and motivate vast numbers of the public.

Advertising should be planned so that it will not only appeal to the monetary interests of the individual, but also to his patriotism. A careful effort can be made to draw out the individual conception of himself as a good-hearted salesman for peace and democracy; a tendency to threaten and bully the Russians must not be allowed to dominate.

It is conceivable that official opposition might be forthcoming from governments of both countries. This opposition could be circumvented by making clear the non-political non-partisan nature of the contest, and its probable effect of under-cutting the Russian war effort with the possibility that a change in the feeling of many Russians would create pressure on Russian officials for a more reasoned approach to international problems. However, Russian opposition would be expected unless the contest were entirely unofficial and proceeded without official notice or comment. Further thinking along these lines will undoubtedly reveal additional ways and means.

Here is an answer to 'But what can I do?' Each person has his individual task to persuade an individual Russian not to go to war. If each of us does this job, and we're as good at selling as we like to think we are, we'll sell EVERYBODY!

BOB and JEAN JEANS

Los Angeles, California

✡ NEWS AND MISCELLANY ✡

CHICAGO, JUNE 22-23

ON INVITATION of University College of the University of Chicago, a CONFERENCE ON GENERAL SEMANTICS will be held at Judd Hall, University of Chicago (5835 Kimbark Avenue), Friday and Saturday, June 22 and 23, 1951.

Individuals wishing to attend the Conference (at which time there will also be held the first membership meeting of the International Society for General Semantics) or to present papers are requested to read carefully the details given below. Membership in the International Society is not required of people attending the Conference; all are invited. Expenses are being kept at a minimum in order to permit as many as possible to take part.

Conference on General Semantics: Arrangements

PLANS FOR THE CONFERENCE on General Semantics to be held at the University of Chicago, Friday and Saturday, June 22 and 23, 1951, are proceeding satisfactorily. Originally the Committee was undecided on whether to hold the Conference downtown or on campus. When it became known, however, that Judd Hall, at 5835 Kimbark Avenue, would be made available, it was decided to hold the Conference there, since it is an especially comfortable place for summer meetings. It is a spacious hall, with cross ventilation and excellent acoustics, and affords pleasant views of the university quadrangles on both sides. There is a comfortable lounge across the corridor from the meeting hall where members can gather for conversation.

Piano Recital and Banquet

THE HIGH POINT of the social activity of the Conference will be a banquet at the Quadrangle Club, to be followed by a lecture-recital at Judd Hall by ANATOL RAPOPORT, who will play works of Debussy, Liszt, and Bach. (Prior to 1937, when he entered the University of Chicago to study mathematics, Dr. Rapoport had traveled extensively in Europe, the U.S., and Mexico as a concert pianist.)

Expenses of Attending Conference

BECAUSE the hospitality of the University of Chicago has enabled a marked reduction of expenses, the Conference registration fee, *including* admission to all meetings and *cost of the Banquet and the Lecture-Recital,* will be Six Dollars.

HOUSING: Rooms will be available on the campus of the University in the University dormitories. These rooms are located within two blocks of Judd Hall. The cost is $5.25 a day, which cost *includes three meals as well as the room.* Everything is supplied except towels. Out-of-town registrants will be able to occupy a room the afternoon before the Conference begins. All out-of-towners can be accommodated in the two dorms available;

the dining-room adjoins them. The daily fee will be less for those not taking their meals at the dining-room the evening of the banquet. But there are no University accommodations for married couples. The following hotels are within easy walking distance of Judd Hall.

HOTELS: The following are moderate-priced small hotels in the University neighborhood (approximate rates, double, $3.50 to $5 a day; single, $2.50 to $4): MAYFLOWER HOTEL, 6125 Kenwood Ave.; GREENBRIER HOTEL, 6220 Greenwood Ave.; UNIVERSITY HOTEL, 5519 Blackstone Ave. The following larger hotels are higher in price, with rates comparable to the large downtown hotels: WINDERMERE HOTELS, 56th and Hyde Park Blvd.; HOTEL SHORELAND, 55th and South Shore Drive.

RESERVATIONS: Those planning to attend the Conference are urged (1) to enter advance registrations as soon as possible, the remittance ($6) to be made payable to the University of Chicago; (2) to make dormitory or hotel reservations, which can be done by the use of the forms supplied on the back cover of this issue of *ETC.*

Pre-Conference Reception

CHICAGO CHAPTER of the International Society for General Semantics will be host at a pre-Conference reception in the graduate students' lounge at Judd Hall, Thursday evening, June 21, from 8 to 10 p.m. There will be a registration desk there that evening (and the following morning) for late registrants. All participants are urged to attend.

Program Notes

AS THIS ISSUE of *ETC.* goes to press, three times as many papers and abstracts as are needed to fill the program have already been received. The first meeting of the International Society for General Semantics, which is to take place in connection with the Conference, is scheduled for 2 p.m., Saturday, June 23. At this meeting the report of the President, financial reports, and the report of the Editor of *ETC.* will be given.

Resolutions, whether on matters internal or external of the Society, may be presented at this membership meeting to be acted upon. Individuals as well as Chapters of the Society are urged to prepare such resolutions as they may consider necessary.

The response to the University of Chicago's invitation to the Conference has been extremely encouraging. Members from Los Angeles, Kansas City, Denver, Toronto, Montreal, New York, Washington, and many other places have indicated their intention to participate.

Register Now

CONFERENCE ON GENERAL SEMANTICS

JUNE 22-23, 1951

JUDD HALL, UNIVERSITY OF CHICAGO

The forms below are supplied for the convenience of those planning to attend the Conference on General Semantics. (Those wishing to keep their copies of ETC. intact may supply the necessary information by letter.)

University College
University of Chicago
19 S. LaSalle St.
Chicago 3, Illinois

Dear Sirs:

I enclose.....for which please enter my advance registration for the Conference on General Semantics at the University of Chicago, June 22-23. I understand that the registration fee of Six Dollars a person includes admission to all sessions of the Conference, the cost of the banquet, and admission to the lecture-recital.

Name.....

Address.....

Position or Occupation.....

Please also secure for me the following accommodations (indicate type of accommodation desired, whether single or double, the price you wish to pay, and the date and approximate hour of your arrival—details on dormitories and hotels may be found on pp. 239-240 of this issue):

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Mail registrations and requests for further information to:

UNIVERSITY COLLEGE
THE UNIVERSITY OF CHICAGO
19 S. La Salle St.
Chicago 3, Illinois

ON THE INVITATION OF
UNIVERSITY COLLEGE
of the
UNIVERSITY OF CHICAGO
THERE WILL BE A

CONFERENCE ON GENERAL SEMANTICS

at the University of Chicago

FRIDAY and SATURDAY, JUNE 22 and 23

All persons interested in general semantics and allied disciplines are cordially invited to attend.

HARLAN M. BLAKE
Acting Dean, University College

RUSSELL MEYERS, M.D.
President, International Society for General Semantics

ADVISORY COMMITTEE FOR THE UNIVERSITY OF CHICAGO: Harlan M. Blake, *chairman;* Thomas Gordon (psychology); S. I. Hayakawa (University College); Bert Hoselitz (social science); Charles Morris (philosophy); Anatol Rapoport (mathematical biology); Nicolas Rashevsky (mathematical biology); David Riesman (social science); Julian Tobias (physiology); Hugh Walpole (board of examiners).

PROGRAM COMMITTEE: Anatol Rapoport, *chairman;* Irving J. Lee (Northwestern); Wendell Johnson (Iowa); Russell Meyers, M.D. (Iowa)

DETAILS regarding program, lodging in dormitories and hotels, expenses of Conference, and registration appear on pp. 239-240 of this issue of *ETC.* Further information may be obtained from

UNIVERSITY COLLEGE
THE UNIVERSITY OF CHICAGO
19 S. La Salle St.
Chicago 3, Illinois